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THE RELATIONSHIP OF HOBBIES TO PERSONALITY CHARACTERISTICS OF SCHOOL CHILDREN

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The present study involves an analysis of the records of 2,342 boys, and 2,437 girls, or a total of 4,779 children. All children were in the sixth grade. They were drawn from 258 different schools, located in 31 states, distributed geographically in all sections of the United States, but with a somewhat unbalanced weighting in favor of north-central and northwestern states. All records available within any given school were used in order to avoid a sampling problem.

The data are taken from a study known as *Coordinated Studies in Education*, the advisory committee of which was composed of Dr. H. A. Greene, of the University of Iowa, Dr. LeRoy A. King, of the University of Pennsylvania, Dr. J. C. McElhannon, of Baylor University, Dr. I. R. Obenchain, of the Birmingham City Schools, Dr. Henry J. Otto, of the W. K. Kellogg Foundation, Dr. David Segel, of the United States Office of Education, Dr. M. J. Van Wagenen, of the University of Minnesota, and the writer, who served as chairman. Schools were invited to participate in the study in terms of their location, size, or the known cooperativeness of their administrators. All participation was voluntary, and each school bought for its own use all materials used in the study. It may be that the methods of selection and the voluntary nature of the participation make for a somewhat better than average type of school. There is some evidence, reported elsewhere, which might be taken to give some support to this point. In any event, the sampling probably is more representative than that found in many comparable analyses.

A rather wide variety of types of records was obtained on each child. Among these are the intelligence test score, personality test score, a teacher evaluation of the child's personality traits, and a statement, prepared by the teacher in conference with the child, in which his hobbies are recorded. The Kuhlmann–Anderson Test was the basis of the intelligence measurement; the B. P. C.—Personal Inventory was used as the personality test; the teacher was given a list of 70 personality traits from which to select as many as five and not more than 12 for each child; and hobbies were classified into 22 different groups so as to aid in the recording of the child's participations. These hobby groups were:

1. Reading—novels, mysteries, fanciful stories
2. Reading—history, science, biography, etc.
3. Reading—funny papers, comics
4. Active games or sports—football, tennis, riding, hiking, etc.
5. Quiet games—checkers, old maid, jacks, solitaire, etc.
6. Playing musical instruments—not radio or phonograph
7. Listening to radio, or phonograph
8. Sewing, knitting, fancy work, etc.
9. Housework — cooking, sweeping, straightening, etc.
10. Going to shows
11. Dramatics—participating
12. Playing make-believe games—teacher, mama and papa, store, church, etc.
13. Religious activity
14. Building things, or shop work
15. Traveling
16. Driving car, riding in airplane
17. Studying
18. Working—farm, store, etc.
19. Clubs—social, dancing, etc.
20. Scouting, or other serious forms of club activity
21. Collecting
22. None

All data from the original report blanks were transferred to Hollerith cards, and in the subsequent discussions of groups tenden-

cies the sortings were made on a Hollerith machine.

In addition to this, 50 psychologists who according to their A. P. A. data are working in either clinical psychology or mental hygiene, or who according to the writer's personal knowledge are working in one of these fields, were asked to cooperate by giving a mental hygiene weighting to each of the 70 personality traits. The writer realizes at once the possible invalidity of this procedure, in a way the impossibility of evaluating traits in the abstract. At the same time the homogeneity of returned judgments would seem to indicate that there actually is some basis for trait differentiation even apart from a particular individual. In any event, the following traits were designated as having definite, and pronounced mental hygienic value:

a. Dependable; reliable
b. Friendly; good-mixer
c. Happy; cheerful
d. Honest; truthful
e. Likes jokes; sense of humor
f. Original; independent thinker
g. Self-controlled; emotional stability
h. Self-reliant; independent

At the same time the following points were designated as having definite, and pronounced negative mental hygienic significance:

a. Cruel; bully type
b. Dishonest; unreliable
c. Over-sensitive about self
d. Unhappy; depressed; moody
e. Will not work or play with others

When an analysis is made of the percentage incidence, as seen in Table I, of the various undesirable traits among both boys and girls possessing the different hobbies, it is striking to note that for the trait groups *as a whole* there is no statistically significant difference at any point of comparison with either sex. In other words, there does not seem to be any significant tendency for boys or girls who possess any given hobby to have either more or fewer extremely undesirable trait assignments, taken as a group, than is the case with boys or girls who have any other hobby.

When attention is turned to the frequency with which the various individual desirable traits are seen, however, certain very significant differences do appear. Thus, among boys, the characteristic *dependable*; *reliable*

TABLE I

PERCENTAGE FREQUENCIES OF APPEARANCE OF DESIRABLE AND UNDESIRABLE TRAITS AMONG CHILDREN HAVING DESIGNATED HOBBIES

(See context for key to traits in table)

	BOYS													GIRLS												
Hobby	Desirable Traits								Undesirable Traits					Desirable Traits								Undesirable Traits				
	a	b	c	d	e	f	g	h	a	b	c	d	e	a	b	c	d	e	f	g	h	a	b	c	d	e
1	34	35	38	33	23	15	4	10	3	5	7	3	1	52	39	44	40	11	13	8	13	0	2	10	3	1
2	36	34	39	36	23	19	6	11	2	5	6	4	1	53	43	43	42	12	16	10	13	0	1	11	2	1
3	29	32	36	30	22	12	3	7	3	6	8	3	1	46	37	40	36	11	11	7	10	0	2	12	3	1
4	29	33	37	31	22	10	4	8	4	6	8	2	1	45	39	43	33	12	11	7	11	0	3	10	3	0
5	29	36	40	36	27	14	5	10	3	5	8	2	2	46	35	41	41	13	11	7	11	2	2	12	2	1
6	38	44	39	36	32	15	6	12	2	3	4	2	0	56	45	43	40	14	17	9	13	0	2	10	2	0
7	29	35	41	36	25	12	5	8	2	6	9	2	1	45	41	42	38	12	10	7	11	0	1	10	3	1
8	33	33	50	32	31	19	6	12	1	1	5	3	1	46	36	41	38	11	9	7	10	0	3	12	3	1
9	30	55	44	27	29	16	5	13	2	6	5	2	1	46	35	42	40	11	8	9	11	0	3	13	3	1
10	29	37	37	31	23	11	3	8	2	6	7	2	1	46	40	42	38	11	11	7	11	0	2	10	2	1
11	17	43	44	39	31	15	5	9	3	5	7	1	0	55	45	40	49	14	14	8	15	0	1	13	4	1
12	34	36	42	29	24	18	7	7	3	7	11	3	2	47	36	39	39	13	11	6	13	0	3	11	2	1
13	37	43	44	37	24	14	5	10	3	5	8	3	1	51	37	43	42	13	10	12	10	1	3	12	3	2
14	34	34	38	3	21	12	5	9	3	6	9	3	1	53	43	37	37	23	10	7	10	1	1	14	6	1
15	38	38	41	32	25	17	3	10	3	5	9	2	0	53	38	44	42	15	12	2	10	0	2	12	1	1
16	31	36	34	24	18	8	3	7	3	7	8	2	7	45	43	37	37	14	18	6	11	0	0	13	3	0
17	41	39	42	39	25	19	8	12	2	7	7	3	1	59	42	45	49	12	16	8	15	0	1	13	3	1
18	29	29	33	29	24	8	4	8	6	8	12	4	1	46	39	39	40	15	11	7	9	0	2	11	2	0
19	29	35	35	35	17	13	4	7	6	6	4	1	0	50	55	48	38	13	18	5	11	1	0	11	5	0
20	34	40	37	40	22	13	3	9	3	3	6	1	0	56	46	40	37	14	13	8	11	0	1	10	2	1
21	33	31	39	33	22	16	6	11	2	6	8	2	1	51	41	45	42	13	16	5	15	0	2	13	2	0
22	20	19	23	20	13	6	3	3	3	7	7	2	1	32	23	25	32	5	3	7	5	0	6	18	7	1

is assigned with significantly greater frequency to boys whose hobby is that of studying than to boys with no hobby, or to boys whose hobby is that of dramatics. Comparably, boys who have as their hobby the playing of musical instruments are rated as dependable with significantly greater frequency than boys who have as their hobby dramatics, or boys with no hobby. In turn, boys with dramatics were listed significantly less frequently as dependable than boys with any of the other hobbies except those who do fancy work, and those whose hobby was "clubs, social dancing, etc." Furthermore, the actual difference for these two latter hobbies was as great in each instance as several other differences involving hobbies in which many more boys participated. In summary, the four hobbies most frequently associated with dependability are: (a) studying, (b) playing musical instruments, (c) traveling, and (d) religious activity; and the one outstanding negative association is that of dramatics, though those possessing no hobby are of a comparable type.

Sex differences are rather pronounced in some of these matters. Whereas dramatics appears as a particularly undesirable hobby so far as dependability is concerned the reverse is true with girls. Seventeen per cent of boys and 55 per cent of girls participating in dramatics are rated as dependable. In fact, dramatics is the fourth highest among girls, falling behind studying, playing musical instruments, and scouting. No statistically significant differences in frequency of the dependability assignment are noted for any hobby, though those listed as having no hobby are assigned this characteristic with from 14 to 27 per cent less frequency than is the case of those in any of the different hobby groups.

When attention is turned to the characteristic *friendly; good-mixer*, no statistically significant differences are noted between the boys' hobby groups. Several reliable differences are noted between those boys listed as having no hobby and those with various designated hobbies. The actual percentage differences range from 10 to 25 between this non-hobby group and the various hobby groups. The four boys' hobby groups showing this characteristic most often are: (a) playing musical instruments, (b) religious activity, (c) dramatics, and (d) scouting. The three hobbies with which friendliness is associated least frequently are: (a) working, (b) collecting, and (c) reading funny papers.

With girls the trait of friendliness is associated most frequently with the *clubs, social dancing* hobby. In fact, there is a statistically reliable difference between the percentage incidence of this trait among girls with this hobby and those having as hobbies the reading of novels, reading of funny papers, active games and sports, quiet games, sewing and knitting, housework, going to shows, playing make-believe games, religious activity, traveling, and those having no listed hobby. Friendliness occurs with next greatest frequency among the groups participating in scouting, dramatics, and the playing of musical instruments. Outside of the non-hobby group it occurs least frequently among the quiet games, and housework hobby groups.

The *happy, cheerful, good-natured* trait, as well as the *honest, truthful* trait is not assigned with significantly greater or less frequency to one hobby group than to any other in the instance of either sex. In both cases, with both sexes, though, the non-hobby group was markedly lower, in several instances reliably lower, than any hobby group.

With respect to *sense of humor*, this appears with significantly greater frequency among the boys of the musical instrument group than among the boys of the car driving group. Among boys, other than the musical instrument group this is seen most frequently among those in the fancy work, and dramatics groups, and least frequently among the non-hobby children, and those in the social dancing group. With girls the greatest frequency of occurrence is among those with a shop-work hobby, and the smallest frequency among those having no hobby. None of the differences is reliable.

With respect to *independence of thinking*, no reliable differences are noted between the hobby group for either sex. The non-hobby groups are appreciably lower than any hobby group, though.

With respect to *self-control*, no statistically significant differences appear among boys or girls. Furthermore, the same condition is true with respect to *self-reliance*.

When the total picture is studied we find that among boys that those with the study hobby are assigned more personality traits

TABLE II

SUMMARY OF PERSONALITY TEST DATA FOR BOYS AND GIRLS HAVING VARIOUS DESIGNATED HOBBIES

Hobby	BOYS Med.	Q_3	Q_1	Q	P. E. md.	GIRLS Med.	Q_3	Q_1	Q	P. E. md.
1	35.18	47.67	22.60	12.54	.57	29.93	41.97	19.62	11.18	.45
2	34.88	47.88	22.96	12.46	.78	29.89	42.53	18.98	11.78	.78
3	36.74	50.08	23.62	13.23	.52	32.69	44.36	21.76	11.30	.43
4	36.41	49.77	23.56	13.11	.44	32.00	43.40	20.96	11.22	.45
5	34.77	49.29	22.81	13.24	.76	31.40	42.63	21.04	10.80	.56
6	33.34	46.33	20.51	12.91	.89	30.06	40.61	18.32	11.15	.63
7	34.35	48.86	21.73	13.57	.63	31.90	43.41	19.74	11.84	.52
8	33.82	48.69	20.56	14.07	2.04	31.47	43.25	20.58	11.34	.48
9	34.65	50.82	19.11	15.86	1.49	31.91	43.59	21.39	11.10	.49
10	36.89	50.09	23.01	13.54	.62	32.10	44.06	20.69	11.69	.54
11	35.17	46.69	22.57	12.06	1.26	29.56	40.43	18.67	10.88	.84
12	36.98	51.31	25.25	13.03	1.23	33.07	45.20	22.67	11.27	.63
13	35.11	46.27	22.83	11.72	1.07	30.07	41.82	18.86	11.48	.72
14	34.61	47.63	21.41	13.11	.60	29.17	41.86	18.43	11.72	1.55
15	32.14	46.21	18.97	13.62	1.16	29.47	41.60	18.56	11.52	.98
16	35.00	51.07	21.44	14.82	1.47	31.50	43.50	19.41	12.05	1.80
17	29.75	46.12	18.56	13.78	1.45	28.81	41.89	16.92	12.49	1.03
18	37.08	50.47	22.02	14.23	1.03	28.48	46.99	17.67	14.66	1.55
19	36.31	49.75	20.41	14.67	2.27	28.78	39.37	17.89	10.74	1.07
20	34.14	47.39	22.24	12.58	.98	28.90	39.40	16.54	11.43	.92
21	33.08	46.72	22.28	12.22	.72	30.36	41.97	18.06	11.96	.77
22	39.15	50.56	28.00	11.28	1.33	35.75	51.49	22.21	14.64	1.74

which are designated as particularly beneficial from a mental hygienic point of view than is the case with any other group. This is followed in order by the religious activity, fancy work, serious reading, and traveling hobby groups. The groups which are assigned fewer of these traits are those with no hobbies, and those with hobbies of driving a car, reading the funny paper, and working. Among girls, however, the hobbies which rank highest are those of studying, playing musical instruments, dramatics, and social dancing. In turn, those which rank lowest are the non-hobby, shop work, and sewing and knitting groups.

When attention is shifted to the test score data, as seen in Table II, we find relatively few differences where statistical reliability is pronounced. Among boys, however, the following differences do appear to be significant:

a. Reading funny papers worse than studying
b. Reading funny papers worse than collecting
c. Working worse than studying
d. Active games worse than studying
e. Playing make-believe games worse than studying
f. Active games worse than collecting
g. Going to shows worse than collecting
h. No hobby worse than:
   (1) Traveling
   (2) Studying
   (3) Collecting

Among girls' hobby groups fewer reliable differences are noted. In fact, it is only between the novel reading and funny paper groups, and the novel reading and make-believe groups that reliable differences are found, in each instance the first named group being the most favored. With both boys and girls the non-hobby group definitely has the worst score of any studied, but the relatively small number of cases, 122 boys and 110 girls, makes it difficult to show median differences which are reliable statistically.

When attention is turned merely to the boys' hobbies with the best median emotionality test scores we find, in order: (a) studying, (b) traveling, (c) collecting, and (d) playing musical instruments. At the other end, exclusive of the non-hobby group, we find: (a) working, (b) playing make-believe, (c) going to shows, and (d) reading the funny paper. Among girls the test scores show working, social dancing, studying, and scouting to rank highest, whereas the worst median scores, exclusive of the

non-hobby group, were those made by those whose hobbies were: playing make-believe games, reading the funny papers, going to shows, and active games.

When teachers' ratings and test scores both are used it seems that the two boys' hobbies which are most consistently associated with a desirable hygienic status are studying and traveling, and, with girls, studying and dancing. On the other hand, the combined ratings of teachers and test place working, and funny papers lowest for boys, and show no consistent association for girls, though the funny paper and active games probably would come closer to fitting here than any other two hobbies.

When median IQ scores for the various hobby groups are correlated with the corresponding emotionality test scores a correlation of .55 was obtained for boys, and one of .70 for girls. This apparently would indicate that the tests of emotionality and intelligence were measuring largely the same function. There are two or three things, however, which tend to negate such a conclusion. To begin with, the .55 coefficient is reduced to about .38 if one eliminates the non-hobby and collecting groups. Further, with girls, the .70 is reduced to about .47 through the elimination of the non-hobby group alone. Then, again, in the case of those groups which were reliably different in emotionality scores no significant intelligence difference exists except as the collecting hobby group of boys is involved, or the non-hobby boys. On the other hand, approximately 25 significant differences in median IQ's are found between groups not significantly differentiated in emotionality. This certainly would tend to render ambiguous any interpretation with respect to the role of tested intelligence in the hobby-personality relationship.

Probably the most significant facts which might be drawn from this discussion are:

a. The absence of a hobby appears to be associated with a different and probably less desirable type of personality adjustment than is found, on the average, in any hobby group.

b. Hobbies do not appear to be associated in any significant degree with undesirable personality evaluations, but certain hobbies do appear to be associated with desirable evaluations with much greater frequency than do other hobbies. In other terms, *if* a value exists at all for hobbies it tends to be a positive rather than a negative one. Withal, hobbies apparently do have mental hygienic significance, though we cannot state with certainty that it is causal.

c. Sex differences both in hobbies and in the significance attached to hobbies are pronounced in many instances.

d. Tested intelligence appears to have some effect on hobby-personality relationships, but it is difficult to say just how significant this effect is.

e. Though hobbies appear to be significant, their significance is not as pronounced, apparently, as some would have us believe.

f. Throughout all considerations of this problem we should be careful to avoid the assignment of causes. It is quite impossible to say from these data whether hobbies are causes or effects of certain personality characteristics.

AN EVALUATION OF STUDENTS' ATTITUDES DEVELOPED THROUGH HOMEMAKING INSTRUCTION IN THE SECONDARY SCHOOLS OF OKLAHOMA[1]

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THE PROBLEM

Homemaking instruction, to be effective, must be a contribution to the experiences of the student; it should supplement rather than repeat the usual life experiences. Yet a question has often arisen as to the effectiveness of education for homemaking in the public school program. This may be due in part to the fact that many of the objectives of homemaking education may be partly achieved through actual life experiences and through the maturation of the individual. In constructing the home economics curriculum there is a definite need for determining what experiences the school should afford in the education of youth for home and family life, which are not provided through usual life experiences, as well as for deciding the degree of emphasis to be placed on learnings acquired with expense to the school.

In education for homemaking and family life, much stress is placed upon the development of right attitudes toward the home and the family. Objectives and desired outcomes in courses are frequently stated in terms of desirable attitudes to be developed.

The measurement of pupils' growth, or development toward desired goals, is the major criterion for the evaluation of the effectiveness of instruction, yet there are few measures by which teachers, and city and state administrators, may judge the quality of a home economics program in terms of these concomitant outcomes of learning.

At the time this study was undertaken a state-wide program for the evaluation of the results and services of home economics instruction in the secondary schools was being carried on in Oklahoma. This study, and a similar study,[2] designed to measure skills and information, were made possible through the cooperation of the State Department of Education, and the Division of Vocational Home Economics and were incorporated as a part of the evaluation program. It was the purpose of the present study (1) to construct objective scales to be used to measure the outcomes of home economics instruction, in terms of attitudes, for the two years of high school above the eighth grade; (2) to administer the scales to a representative sampling of high school pupils in Oklahoma; and (3) to discover what attitudes students in home economics develop through home economics instruction in secondary schools of Oklahoma that they do not develop through usual life experiences. This last purpose was realized by administering the tests to an adequate sampling of students having completed two years of home economics instruction above the eighth grade, and comparing the results with those of a comparable group, not having had such instruction.

It is hoped that this investigation will serve (1) as a guide to teachers and administrators in determining desired outcomes of homemaking education which are attained without home economics instruction, but through growth in general mental and social abilities or as a result of the general environment of home and school; (2) as a basis for determining the degree of emphasis in homemaking instruction to be placed upon those less tangible, but no less important, outcomes of learning; (3) as an introduction to further research and investigation in the field of home economics education.

THE CONSTRUCTION OF ATTITUDE SCALES IN HOMEMAKING

The measurement of attitudes is a complex, but not an impossible problem, Thurstone[3] states:

[1] Summary of a thesis for the Ed. D. degree, University of Oklahoma, 1939. The writer is indebted to the members of her advisory committee: Dr. L. B. Hoisington and Dr. Henry D. Rinsland; and to the State Department of Education for the publication of the tests.

[2] Frost, Hazel, *A Measure of Skills and Information Developed Through Home Economics Instruction in the Secondary Schools of Oklahoma*. Unpublished Doctor's thesis, University of Oklahoma, 1939.

[3] Thurstone, L. L., "Attitudes Can Be Measured", *The American Journal of Sociology*, XXXIII (January, 1928), p. 531.

"It will be conceded at the outset that an attitude is a complex affair which cannot be wholly described by a single numerical index." However, he points out that an ordinary table is a complex affair "which cannot be wholly described by any single numerical index." Nevertheless we do not hesitate to say that we measure the table . . . "We say without hesitation that we measure a man when we take some anthropometric measurements of him . . . In the same sense . . . it is just as legitimate to say that we are measuring attitudes as it is to say that we are measuring tables or men."

Curricula Areas

The first step in this study was to decide upon some broad, major areas within which attitudes might be measured. This was done by selecting from all the objectives for the two years to be covered by these scales, as given in the Oklahoma State Courses of Study in Homemaking, those particular objectives which would be realized through the development of attitudes. To make this selection possible, the following definition of "attitude"[4] was accepted for the purpose of this study: "Attitude . . . a mind set correlated with a feeling or belief . . . (a viewpoint toward something or a feeling sufficiently definite to influence one's activity in a certain direction)." Objectives stated in terms of appreciations, desires, interests, attitudes, and ideals were taken as attitudinal objectives. In some instances objectives stated in terms of understanding or realization were also included, since they seemed to imply the development of attitudes.

The teaching units used in setting up the major areas for this study were taken from the Oklahoma State Courses of Study in Homemaking for High School.

The objectives for each of these units, stated in terms of attitude, interest, appreciation, realization, recognition, desire, and ideals were assembled under the main headings or areas into which they seemed to fall. In those cases where an objective was found to overlap the area boundaries, or to belong to more than one unit, it was listed under each heading to which it applied.

In listing the objectives for the different units it was found advisable to check the desired specific outcomes stated in the courses of study which would afford evidences of the attainment of the objectives. This was done to insure a more valid instrument for measurement. Since scales designed to measure such a large number of items would prove impracticable of administration, the objectives and outcomes under each unit were grouped into attitude areas; five such major areas with their subdivisions were set up for the construction of the scales. The major areas were: I, Home and Family; II, Health; III, Food and Nutrition; IV, Clothing; V, Aesthetic Values.

The reasons for the selection of these major areas were: (a) a few broad major areas lend themselves to this kind of measurement; (b) the overlapping of a number of the objectives would seem to indicate the attainment of them might be measured in a few broad areas rather than in a number of specific fields; (c) many of the objectives for the units were stated in terms of a social situation; (d) the major objectives of the curriculum are stated in terms of a social situation; and (e) the areas suggested seem to cover the major fields involving adjustment of the individual, in terms of attitudes and interests, for family life.

In order to establish the validity of the selection of objectives and major areas, the list of objectives was submitted for checking to a group of specialists in the fields of educational measurements, psychology, and home economics education. On the basis of the pooled opinions of the judges the major areas already set up were agreed upon.

Items of the Scales

The meaning of the term "attitude" which has been agreed upon for the purpose of this study has been stated, but it is also necessary to indicate how the term "opinion" is used. Thurstone[5] states that "opinion" is a verbal expression of attitude. An opinion, therefore, may be interpreted as a symbol of an attitude. In the present study the attitudes of students were measured by their acceptance or rejection of opinions composing the scale items.

Statements which were taken to represent opinions or the expression of attitudes were compiled by reviewing the state adopted texts, the State Courses of Study, and recom-

[4] *Seventeenth Annual North Atlantic Regional Conference Report on Home Economics Education*, Misc. 1700, U. S. Office of Education, Vocational Division 1935, p. 30.

[5] L. L. Thurstone and E. J. Chave, *The Measurement of Attitude*, The University of Chicago Press, Chicago, 1932, p. 7.

mended references given at the end of each unit in the State Courses of Study in Home Making, as well as newer reference material which had been recommended to teachers by the State Supervisor of Home Economics. In collecting samples from which to construct the scales, statements were selected which expressed (a) an attitude that is desirable for the realization of the objective in question. Further criteria, as given by Thurstone[6] for the selection of statements, used in making the initial statements were:

(1) The statements should be such that they can be endorsed or rejected in accordance with their agreement or disagreement with the attitude of the reader. (2) Every statement should be such that acceptance or rejection of the statement does indicate something regarding the reader's attitude about the issue in question.

These statements of opinion expressing both desirable and undesirable attitudes in relation to the attainment of the objectives in each of the major areas were also submitted to the group of specialists who had assisted in setting up major areas and in determining objectives to be used as the basis for measurement. Each statement was evaluated by the separate members of this committee as to whether it expressed an attitude that was either desirable or undesirable for the realization of the objective in question. The statements were also ranked into one or another of five categories expressed in order of merit. This ranking was done on the basis of a judgment as to how effectively each statement serves as an index of the realization of the objective.

The scale items were then revised in accordance with the suggestions of the committee of specialists. Some statements were changed from one division to another, some were reworded, some eliminated, and some additions were made in order to evaluate more adequately the realization of every objective.

Upon the completion of this revision, the test material was presented a second time, for ranking, to the five judges who composed the original committee and to ten additional judges, all of whom are recognized specialists in the field of home economics teacher training and supervision, psychology, educational measurement, and homemaking. For the area on aesthetic values, three teachers of art assisted in the ranking of the scale items. Responses were received from twelve of the judges on the evaluation of the test for Area I, from eleven judges for Areas II, III, and IV, and from seven judges for Area V.

[6] Ibid.

Ranking of Scale Items

The ranking of objectives and statements was done on the following basis: (1) Objectives selected for each area were ranked in consecutive order of importance for effective homemaking instruction. (2) Statements of opinion were, first, evaluated as to whether they expressed an attitude either desirable or undesirable for the realization of the objective in question; and second, ranked in consecutive order on the basis of how effectively they served as an index of the realization of the objective.

The items finally chosen for the attitude scales in homemaking were selected by the following procedure: (1) Total score values were determined for each statement from the ranking by the judges. (2) Total score values were averaged and those statements under each objective falling within the lower fifty percentile were selected, since lower ranking indicated relatively greater importance. In those cases in which the preliminary scales contained a relatively small number of statements covering the objectives which had a high significance, sixty per cent of the total original number was retained in the final scales. Statements having the least disagreement in ranking were selected in preference to those showing wide disagreement, although having the same average score. Statements ranked as desirable by some judges and as undesirable by others were eliminated as ambiguous. (3) The number of statements used was determined by the ranking given the objectives. Six statements were used for objectives ranked at the median or one step interval below and above the median. Eight statements were used for objectives ranked at the second and third step interval below the median. For objectives ranked below this, ten statements, for those objectives in the second and third step interval above the median, four statements were used, and for each objective ranked above this, two statements. As stated previously, high ranking indicated relatively less importance, therefore, fewer statements were used for those objectives receiving high ranking. (4) When two statements ex-

pressed practically the same attitude, the one receiving the best ranking was retained and the other eliminated. (5) The next best ranked statement of a different attitude was then retained in preference to the one eliminated, even though it was ranked slightly higher by the judges. (6) In order to keep expressions indicating desirable and undesirable attitudes evenly balanced in number, in some instances it was necessary to select additional ones from the preliminary lists to balance those recommended by the judges. These were chosen from those having the next best ranking to statements already selected according to the criteria set up.

In Area V, the scale included photographs of articles used in clothing, house furnishings, and home decoration, which the students ranked in the order of their preference, thereby indicating their appreciation of beauty and good taste in selecting these articles. These illustrations had been ranked by the committee of expert judges and teachers of art. Pupils' attitudes toward beauty and good taste were evaluated by checking their ranking with those of the competent judges. Seventy-one of these illustrations were included in the scale.

The order of the statements in the final scales was determined by the average ranking given each statement. The one in each group having the lowest rank was placed first for that group. The one ranking second was listed next, and so on, for each objective. Thus the arrangement of statements of opinions expressing either desirable or undesirable attitudes was due to the chance result of the rankings.

Sources of Data

The Plan for the Testing Program

The first step in planning the testing program was the selection of the groups of pupils and the schools to be used in the administering of the tests, and securing the cooperation of public school administrators in carrying out the program of measurement. The interest and participation of the public schools in administering the tests was secured through the assistance of the State Department of Education.

Securing Equivalent Groups

The method used to secure equivalent groups for the administration of the tests was to select: (1) one group of students who had completed the two years of instruction in homemaking which the scales were designed to cover; and (2) an equal number of students of the same grade placement who had either had no instruction in homemaking education, or none above the eighth grade. Since the number of pupils involved was relatively large, this procedure insured two groups which were equivalent in average ages, and in life and school experiences, other than in instruction for homemaking.

The number of pupils to be used in the measurement program, in order to secure an adequate sampling, was determined upon the basis of total enrollment, for the state, of pupils in home economics courses in the two years above the eighth grade. This information was obtained from the State High School Inspector's Report on Enrollment for the second month of the school year in which the tests were given. The number of pupils selected for each group was to be approximately one-tenth of all pupils enrolled in home economics in the two years of instruction included in the testing program. However, since this information was not available, one-tenth of all pupils enrolled in home economics courses above the eighth grade was agreed upon.

Location and Types of Schools

The selection of the schools to be used in the testing program was made with the assistance of the State Committee on the Study of Home Economics Education.

In order to secure a representative sampling from all sections of the state, the schools were selected, first, on the basis of geographic location. The state was divided by lines drawn arbitrarily on the map into four districts of approximately equal areas. These four districts shall hereafter be designated as the northeastern district, the southeastern district, the northwestern district and the southwestern district. A second factor determining the choice of schools was the selection of representative types of schools. Therefore, the schools tentatively selected represented rural consolidated schools, and urban schools in small, medium, and large towns. Small, one or two teacher rural schools were not included because comparatively few of such schools offer home economics. The relative proportion of urban and rural population within each district was used as a basis for determining the number

of schools of each type to include in the testing program. Other types of schools included were those having vocational home economics departments, and those offering non-vocational courses in home economics. Schools of these types were selected in as nearly even numbers as possible. This was partly determined by the number of schools of each type within the district.

To insure equivalent representation of the four districts, the determination of the number of schools selected from each district was based upon the ratio of the schools, within that district, offering home economics in the two years covered by this study, to the total number of such schools in the state.

Selection of Pupils

The next step in planning the testing program was the selection of pupils to whom the tests were to be administered. The groups to whom the tests were given were composed of: (a) pupils who had completed the two years of homemaking instruction, representing approximately one in ten of all pupils enrolled in these two years of home economics; and (b) a comparable number of pupils of the same grade level who had either had no courses in home economics, or none above the eighth grade. The determination of the number of Home Economics pupils in each school to be used in the testing program was based upon the following factors: (1) the total enrollment in home economics, in two years of instruction above the eighth grade, in the school; (2) the ratio of this enrollment to the total enrollment in home economics, in these two years, for the district; (3) the number of pupils, having completed the two years of instruction covered by the tests, who were still enrolled in the school and who would be available for testing. Hereafter, this group will be identified as the home economics group.

For the second, or non-home economics group, an equivalent number of junior and senior high school pupils was selected. As nearly as possible, these pupils represented the various types of schools, within the district, in the same numerical ratio as the home economics group. Pupils in the senior year of high school were selected, in so far as possible, with only a sufficient number in the junior year to make the total number to whom the tests were to be given. The number of tests actually used for tabulation of data was 2,158 which included 1,241 from the home economics group, and 917 from the non-home economics group.

Evaluation of the Attitude Scales in Homemaking

The value of any measuring device is dependent upon its validity, and the reliability with which it measures that which it is intended to measure.

Rinsland[7] states, "Validity is the property of a measuring instrument to measure." Rinsland[8] recognizes three kinds of validity: curricula, psychological, and statistical; "Validity is a measure of the purity of the thing one intends to measure." Since the scale items were selected from the courses of study used in Oklahoma in home economics instruction, and from references recommended by the State Department of Education; and since the items used in the scales were twice evaluated by competent judges, the curricular validity of the scales is assumed.

Reliability, according to Rinsland[9], is determined by the consistency or accuracy with which a test measures what it does measure. If individual scores, obtained when a test is repeated, are close to those obtained when the test was given previously, the test is considered to be reliable. The reliability of a test may be measured by correlating the scores made on the test by a given group with the scores made by the same group when the test is repeated or a duplicate test is given. Since there is no duplicate of the Attitude Scales in Homemaking, and since, for a number of administrative reasons repetition of the tests was not open to the writer, the method of "split halves" was used. Scores were obtained from one hundred of the tests picked at random from the total number of tests, and all odd-numbered items in the scales were grouped for one-half of the test and all even-numbered items for the other half, thus giving the "split halves" used in determining the reliability of the scales.

From these scores the coefficient of correlation of the even-numbered items with the odd-numbered items of the test was obtained, and by the use of the Brown–Spearman prophecy formula the coefficient of reliability was found. The coefficient of re-

[7] Rinsland, Henry D., *Constructing Tests and Grading*, Prentice–Hall, Inc., 1937, pp. 13 and 14.

[8] Op. cit., p. 289.

[9] Op. cit., p. 14.

liability for the whole scale is .921 with a standard error of ±.015. Shen's[10] formula $\sigma_r = \frac{2(1-r^2_{12})}{\sqrt{N}(1+r_{12})}$ was used in obtaining the standard error of r. The standard error of a score obtained for the whole by the formula is ± 5.413.

Since the majority of writers in the field of educational measurements agree that a reliability coefficient of .80 is satisfactory for survey tests, a coefficient of reliability of .921 indicates high reliability of the attitude scales for the purpose for which they were used; and it indicates potential diagnostic values.[11]

[10] Shen, E., "The Standard Error of Certain Coefficients of Correlation." *Journal of Educational Psychology*, Vol. 15, pp. 462-465, 1924.

[11] Rinsland, Henry D., *Constructing Tests and Grading*, Prentice-Hall, Inc., 1937, p. 285.

Comparison of the Home Economics and the None-Home Economics Groups

From the results of the testing program, the mean scores for each of the two groups, to whom the scales were given, were computed for each division of the test and for the total test; and the differences between the two means for the total scales, and for each part of the scales were found. The average scores, or mean, the standard deviation, and the standard error of a score for the Home Economics Group and the Non-Home Economics Group are given in Table I. The difference in the means, standard deviation of the difference, ratio of significance, and the chances in one hundred that a difference is greater than zero, between the two groups are shown in Table II.

Table I

The Mean, Standard Deviation and Standard Error of Each Part of the Scales for the Home Economics Group and the Non-Home Economics Group

	Home Economics[a]			Non-Home Economics[b]		
Parts of Scales	Mean	Standard Deviation	Standard Error of a Score	Mean	Standard Deviation	Standard Error of a Score
Total Scores	327.9	±53.5	1.82	290.0	±85.0	2.82
Home and Family	119.9	±14.5	.41	112.3	±26.0	.85
Child Development	25.1	± 4.8	.13	23.1	± 5.9	.22
The Family	94.7	±11.0	.31	89.2	±20.4	.67
Health	39.0	± 7.7	.21	35.7	±11.5	.50
Foods	39.7	± 8.4	.23	35.3	±12.9	.42
Clothing	30.4	± 7.2	.20	26.9	±11.0	.15
Aesthetic Value	99.2	±32.9	.93	79.5	±36.4	1.20

[a] N = 1241.
[b] N = 917.

Table II

Difference in Means and Significance of the Difference of Each Part of the Tests for the Home Economics and the Non-Home Economics Group

Test Parts	Difference in Means[a]	Standard Deviation of Differences	Ratio of Significance	Chances in 100
Total Scores	+37.89	±3.25	11.65	100
Child Development	+ 2.04	± .25	7.82	100
The Family	+ 5.55	± .76	7.47	100
Total Home and Family	+ 7.58	± .95	7.98	100
Health	+ 3.28	± .54	5.98	100
Foods	+ 4.41	± .36	12.03	100
Clothing and Personal Appearance	+ 3.49	± .25	13.69	100
Aesthetic Values	+19.68	±1.52	12.87	100

[a] Plus signs (+) before the difference in means indicate that the difference was found to be in favor of the home economics group.

The difference in the means was in every instance found to be in favor of the Home Economics group. This is indicated in Table II by the use of plus signs (+) before each difference as given in the table. The significance of each difference is shown: (1) by the ratio of significance which in every case is greater than three; (2) by the fact, that for each area in which attitudes were measured, the chances that the difference will always be greater than zero in favor of the home economics group are one hundred times in one hundred. The difference in the means of the total scores on the scales shows a significance beyond question, since the ratio of significance is 11.65.

These findings reveal the significant fact that home economics instruction is developing desirable attitudes in pupils toward home and family life that are not learned elsewhere. Comparison of the ratio of significance with that obtained from the tests on skills and information by Frost[12] reveals that the two ratios are approximately the same, being 11.65 and 11.46 respectively. From these findings there is justification for the premise that homemaking education has about equal influence on attitudes and skills.

Objectives stated in terms of attitudes evidently are being realized in homemaking instruction. Teachers may not always be aware of just how these aims are being realized, but the above results indicate that teachers are conscious of these objectives in guiding the learning experiences of pupils, and that desirable attitudes toward home and family life are being developed through homemaking instruction.

[12] Frost, Hazel, Op. Cit., p. 50.

Since the attitude scales were administered with tests of skills and information as part of a cooperative program for the evaluation of the effectiveness of home economics instruction in the secondary schools of Oklahoma, it is possible to ascertain the correlation between attitudes toward home and family and skills and information in home economics. Coefficients of correlation were calculated between the total scores of the attitude scales and the tests on skills and information and the parts of the two sets of tests having elements or factors in common, for both of the groups to whom the tests were given. The coefficients of correlation and probable error for each coefficient for both groups are given in Tables III and IV.

Positive correlations between the two sets of tests were obtained in every instance. However, these correlations, with two exceptions, are low but statistically significant. The correlations which are sufficiently high to indicate significant relationships are between the section on Home Furnishings of the achievement tests and on Aesthetic Values of the attitude scales for the home economics group, and the correlation between the same sections on Clothing and Personal Appearance of the two sets of tests for the non-home economics group. These correlations are .758 with a probable error of $\pm$ .008, and .678 with a probable error of $\pm$ .012 for the first and second correlations respectively. While these correlations do not denote very high relationships, yet they do denote substantial or marked relations. Except for the Clothing and Personal Appearance parts of the test, the correlations between the two sets of tests were higher for

TABLE III

CORRELATIONS BETWEEN ATTITUDE SCALES AND TESTS ON SKILLS AND INFORMATION FOR THE HOME ECONOMICS GROUP

Divisions of Tests		Coefficients of Correlation	Probable Error of r
Skills and Information	Attitudes		
Total Scores	Total Scores	.366	.017
Home and Family	Home and Family	.250	.018
Home Furnishing	Aesthetic Values	.758	.008
Child Development	Child Development	.203	.018
The Family	The Family	.146	.019
Health	Health	.178	.001
Foods	Foods	.186	.013
Clothing	Clothing	.205	.001
Related Art	Aesthetic Values	.409	.010

TABLE IV

CORRELATIONS BETWEEN ATTITUDE SCALES AND TESTS ON SKILLS AND INFORMATION FOR THE NON-HOME ECONOMICS GROUP

Divisions of Tests			
Skills and Information	Attitudes	Coefficients of Correlation	Probable Error of r
Total Scores	Total Scores	.283	.020
Home Furnishing	Aesthetic Values	.215	.021
Home and Family	Home and Family	.192	.021
Child Development	Child Development	.114	.022
The Family	The Family	.326	.019
Health	Health	.104	.022
Foods	Foods	.154	.021
Clothing	Clothing	.678	.012
Related Art	Aesthetic Values	.089	.022

the home economics group than for the non-home economics group.

Home economics instruction is developing desirable attitudes toward home and family life and the study further reveals that the development of desirable attitudes is related to the acquisition of skills and information.

CONCLUSIONS AND SUMMARY

The purpose of this study was to evaluate the effectiveness of home economics instruction in developing desirable attitudes toward homemaking and family life, by measuring the difference between the attitudes of pupils having received such instruction in high school and those of pupils who had not had such instruction, or none above the eighth grade. This measurement program necessitated the construction of scales which might be used as an index of pupils' attitudes toward home and family life. An evaluation of the scales reveals that they may be used for survey purposes, and to the degree they reveal items that can be taught, they are diagnostic in value.

Some pertinent findings are:

(1) The differences between the averages, or means, of the scores of the two groups are statistically significant, and provide clear evidence that desirable attitudes toward home and family life are developed through home economics instruction, which are not gained as effectively through usual life experiences or the maturation of the student.

(2) The most effective instruction, as indicated by the reliability of the differences in the means of the two groups, is provided in the development of desirable attitudes toward clothing and personal appearance, foods and nutrition, and appreciation of aesthetic values.

(3) That there is positive relationship between attitudes and skills and information is shown by the correlations of the two sets of tests for both the home economics and the non-home economics groups. The ratios of significance of the differences in the means also indicate positive relationship between the development of attitudes and the acquisition of skills and information.

(4) Comparison of the development of desirable attitudes with achievement in terms of skills and information shows positive, but low correlations. Those areas in which the correlations were low or negligible are family relations, health, and foods and nutrition. The only correlation denoting substantial relationship was between skills and information in home furnishing and attitudes toward aesthetic values. The correlation between the total scores of the achievement tests and the attitude scales is also low for both groups.

(5) Analysis of the correlations for the non-home economics group reveals that, in general, the relationship between desirable attitudes toward home and family life and skills and information in homemaking is even less marked than for the home economics group. Higher correlations were found for the non-home economics group on clothing and personal appearance than for the home economics group. The same was also true for the tests on family relationships.

RECOMMENDATIONS

This study has revealed a significant difference in the relation between achievement of pupils who have received home economics in-

struction and those who have not had such instruction in terms of skills and information in home economics and the development of desirable attitudes toward home and family life.

The slight significance of the differences in the average scores made by the two groups in the area on the family as well as the higher correlation for the non-home economics group, in this area, between the attitude scales and the achievement tests reveals a need for more effective instruction in the development of desirable attitudes toward economic relationships, and of attitudes toward home life and the relations of family members.

The definitely higher correlation for the non-home economics group between the two sets of tests for clothing and personal appearance warrants a careful analysis of teaching objectives, method, and content in this area to insure more marked relationships between achievements and attitudes.

The very low correlations between other parts of the two sets of tests, viz., family relations, health, and foods and nutrition, indicates a need of closer functional relationships between information and attitudes about the same topics.

A MEASURE OF SKILLS AND INFORMATION DEVELOPED THROUGH HOME ECONOMICS INSTRUCTION IN THE SECONDARY SCHOOLS OF OKLAHOMA[1]

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THE PROBLEM

Home economics is a comparatively new subject in the high school curriculum of today and, as with any new material, its contribution to curricular objectives is frequently challenged. The effectiveness of home economics instruction in realizing stated objectives, or outcomes, is a debatable subject within the ranks of home economists as well as among those not actively engaged in the profession.

Because of the nature of home economics, special methods and techniques are necessary for satisfactory instruction. To this must be added cost of instruction, equipment, and housing space not demanded by other school subjects. There are those who consider this as needless expense, and it is they who have advanced the premise that home economics instruction in the school is unnecessary, since it is a repetition, to some extent, of the student's experiences in the home. For these reasons many schools of the state have not included home economics in their curricula.

The need to investigate this assumption, that home economics instruction is a repetition of the student's experiences in the home, as well as to evaluate the quality of home economics instruction in the secondary schools of the state gave impetus to this study. It was the cooperation of the State Department of Education and the Division of Vocational Home Economics that made the study possible as a part of a state wide program of evaluation of the results and services of home economics education in the secondary schools of Oklahoma.

The immediate purposes of this study were: (1) to construct tests which could be used for the measurement of achievement in skills and information developed through home economics instruction in the two years of secondary school above the eighth grade; (2) to measure the achievement of secondary school pupils in skills and information developed through home economics instruction; (3) to compare the achievement, as measured by the tests, of students who have had instruction in home economics with the achievement of a similar group who have not had such instruction.

The Oklahoma Courses of Study for home economics instruction in secondary schools offer to the teachers in that field a plan of procedure which, when followed, should insure uniformity of information to the students in all schools in which home economics is taught. It was from these courses of study and their use that much of the material for this study was obtained.

From the findings of this study it is hoped the following results may be realized: (1) that the effectiveness of teacher training may be improved by pointing out the strengths and weaknesses of home economics instruction in the secondary schools; (2) that the results of the tests may be utilized as a basis for curriculum construction and the elimination of the teaching of known materials in home economics courses; (3) that tests used in this study may serve as a guide for teachers in constructing tests to measure pupil achievement and the efficiency of their own teaching; and (4) that there may be improvement of measurement techniques in evaluating instruction in home economics.

CONSTRUCTION OF THE TEST

A prime consideration in achievement testing is that the tests provide a measure of the objectives of the subject. Concerning this criterion Tyler[2] has the following to say: " . . . a fundamental task in constructing achievement tests . . . is to make certain that the important objectives of the subject and course are adequately measured. This is

[1] Summary of a thesis for the Ed. D. degree, University of Oklahoma, 1939. The writer is indebted to the members of her advisory committee: Dr. Henry D. Rinsland and Dr. L. B. Hoisington; and to the State Department of Education for the publication of the tests.

[2] Ralph W. Tyler, *Constructing Achievement Tests*, Ohio State University, 1934, p. 4.

so obvious a requirement for a valid examination that there is nothing new in the suggestion that it is the essential criterion for validity."

If objectives have not previously been formulated, the first step in constructing an achievement test is to set up the objectives to be measured. Upon the nature of these objectives depends the type of achievement tests to be constructed.

Selection of Objectives

Since the tests constructed for this study were based upon the Oklahoma Courses of Study for Home Making Instruction[3] obviously the first part of the work was to check the objectives as previously set up for the various units included in Home Making I and II. These units as listed in the courses of study were as follows: Home Making I. A (1) Home and Family, (2) Food for the Family; Home Making I. B (3) Health and Home Care of the Sick, (4) Related Art, (5) Clothing for the Family; Home Making II. A (1) Clothing Selection and Construction, (2) Child Development; Home Making II. B (3) Choosing, Furnishing, and Equipping the Home, (4) Managing the Home, (5) Food for Special Needs.

The present study is concerned with the measurement of skills and information, so only those objectives which were stated in terms of these attainments were selected. It was necessary to combine some of the objectives, to reword others for clarification, and to eliminate duplications, as well as those objectives which can not be measured by paper and pencil tests. The selected objectives were then carefully checked to determine whether they were stated in terms of student behavior, but only where it was deemed absolutely necessary was the wording changed.

Sources of Test Items

After the objectives were set up the next problem that presented itself was to determine with what items of subject matter the student must be familiar in order to have desired behavior.

Since the tests were to be administered in varying situations caused by differences in teacher personality and preparation, as well as physical facilities for adequate instruction, it was believed that the most satisfactory sources for the test items were the State Courses of Study, State adopted texts in homemaking, and the suggested references as listed with each unit in the State Courses of Study.

For the construction of the tests, items of essential subject matter that pertained to each objective were collected from all of the available sources. These items offered the material to be used as a basis for the construction of the tests. The tests were planned around the chosen objectives, each specific objective being measured by one or more tests.

Types of Tests

In selecting the types of tests to be constructed only the newer types of objective tests were considered. As many types as were found applicable were used. True and false type tests were carefully avoided, since many studies show this type to be the least valid and reliable under common conditions of test construction.

Multiple choice, matching, and variations of these types of tests were used extensively. These were constructed with the number of possible answers varying from three to ten in order to lessen the chance of guessing the correct response. Some objectives involving understanding of technical terms were measured by the use of matching type tests.

Sources of Data

Securing Equivalent Groups

The first step in the collecting of data was to establish the basis for the selection of comparable groups for the measurement program. The following method was used to obtain these two groups: (1) A representative number of students who had completed the two years of instruction in home economics above the eighth grade was selected. In order to secure an adequate sampling, it was necessary that the number of tests to be administered be based upon the total enrollment of girls in home economics in the two years which the tests were designed to measure. From the State High School Inspector's Report on enrollment for the second month of the school year in which the tests were given, it was found that the total enrollment in all home economics classes above the eighth grade was 16,806. Since the number

[3] *Oklahoma State Courses of Study in Homemaking*, Home Economics Bulletin No. 10, Division of Vocational Education, Oklahoma State Department of Education, 1933, p. 3.

of pupils enrolled in the two years to be covered by the tests was not available, the data were obtained by administering the tests to students approximately equivalent in number to one-tenth of the total enrollment in home economics in the State. This insured an adequae sampling, should the total number of tests sent out be either not returned or disqualified. (2) For the equivalent group an equal number of girls of the same grade placement, who had received either no home economics instruction or none above the eighth grade, was selected. Hereafter, the two groups will be referred to as the home economics group and the non-home economics group.

Geographical Location

To insure a representative sampling from all sections of the state, schools were selected on the basis of geographic location. The state was divided into four districts, the divisional lines being drawn from the north to the south and from the east to the west in as near equal areas as was possible.

The determination of the number of schools selected in each district was based upon the ratio of the schools in the district, offering home economics in the two years above the eighth grade, to the total number of schools in the state offering such instruction.

Types of Schools

Within each district schools were selected to represent the various types of schools in the public school systems of Oklahoma. Rural consolidated schools and urban schools located in small, medium, and larger sized towns were the types included. The number of each of these types was based upon the relative proportion of rural and urban population. Schools offering vocational and non-vocational home econmics in as near an equal number as possible, schools having one teacher and those having two or more teachers in home economics, were also selected for the administration of the tests.

Selection of Students

The factors considered in determining the number of home economics pupils to whom the tests were administered in each school were: (1) the total enrolment in home economics in the two years above the eighth grade; (2) the ratio of this enrolment to the total enrolment in home economics for the district; and, (3) the number of students having completed such instruction still enrolled in the high school.

In selecting the second group for each district, students who had received no home economics instruction in high school and those who had had no home economics instruction above the eighth grade were chosen. The non-home economics group was equivalent in number to the home economics group. The students in the non-home economics group were juniors and seniors in high school which represented the same grade placement as the home economics group. For both groups, students in the senior year in high school were selected, with additional students from the junior class in sufficient number to complete the maximum number to whom the tests were to be given.

Administration of Tests

One hundred and ten schools in the state signified a willingness to assist in the testing program and to these schools 1,665 tests were to be administered to the home economics group and 1,745 to the non-home economics group. Because of errors in the administering of the tests and the failure of some schools to return the total number sent to them, the number of tests used in this study was 1,241 for the home economics group and 917 for the non-home economics group. Since the number first set up as an adequate sampling was based upon the total enrolment of students in home economics courses above the eighth grade in the State and not just the two years which the tests were designed to cover, the number determined upon as an adequate sampling represented more than one-tenth of the students actually enrolled in these two years in home economics. This study was concerned only with two years, that is, the two years above the eighth grade, hence, the sampling was considered adequate.

Recording of Data

After the tests were scored, it was necessary to organize the scores or data before systematic use could be made of them. All of the data were arranged under five main headings and four sub-headings. The main headings were: (1) Home and Family; (2) Health; (3) Foods; (4) Clothing; (5) Related Art.

The headings were selected for the various units in the tests in order that the tabulation

of data might conform to the major areas of homemaking insruction as given in the State Courses of Study. In order to record all the units of the tests under appropriate headings, it was necessary to sub-divide Part 1, Home and Family, into four sub-headings. These sub-divisions were: (1) Home Furnishings; (2) Home Management; (3) Child Development; (4) The Family.

Evaluation of Tests

Reliability

"The reliability of a test is determined by the consistency with which it measures the capacity of those taking it."[4] A test then, is reliable in proportion to the degree to which an individual's scores in any given test are close to his original scores, should the test be repeated. The reliability of a test may be measured by correlating the scores made on a test by a given group with the scores made on the same or a duplicate test by the same group. This method of measuring the reliability of the tests was not possible in the present study, due to the size of sampling, the length of the tests, and other physical difficulties that the process involved.

Since the tests could not be repeated nor could duplicate tests be administered to the same group the reliability was determined by correlating two halves of the test (scores on the even items and odd numbered items), and then by the Brown–Spearman formula, the reliability of the whole test was found. This procedure was as follows: one hundred copies of the tests were taken at random, and from them two independent sets of scores were made up by combining alternate items in the tests. For example, one set of scores was the performance on the odd items and the other set, the performance on the even items. These two sets of scores were correlated to find the coefficient of correlation of the two halves of the items in the test. Then by using the Brown–Spearman formula the reliability of the whole test was calculated.

The reliability of the tests as a whole is .929 with a standard error of $\pm$ .014. The standard error was obtained by the use of Shen's[5] formula $\sigma_r = \frac{2(1 - r^2_{12})}{\sqrt{N}(1 + r_{12})}$. The standard error of a score is $\pm$ 6.227. The correlation, with its low probable error, and standard error of a score meet the criterion of reliability for diagnosis, although the tests were used only for survey purposes in this study.

Validity

In addition to reliability, validity is an important characterstic for a test to possess. Linquist[6] states:

> "The most important—the all important—characteristic of any test is its validity . . . If a test is 'valid' it is valid for a given purpose, with a given group of pupils, and it is valid only to the degree that it accomplishes that specific purpose for that specific group."

Validity indicates the extent to which a test measures that which it is supposed to measure, and involves both objectivity and reliability. The test must be scored with a reasonable degree of objectivity and give reasonably accurate results, if it is to furnish a valid measure. One method, frequently used in educational measurements, of determining validity is to correlate the scores made on the test to be validated with pupils' ratings on some other criterion such as school marks or intelligence tests. However, difficulty often arises in the use of this method, since the criteria are themselves in need of validation.

There are certain techniques which when employed in test construction will insure validity. These techniques were used in constructing the tests which are a part of this study. They were: (1) The objectives of the units in the State Courses of Study, which the tests were to cover, were listed; (2) Each of these objectives was defined in terms of pupil behavior; (3) Test situations were set up which would provide opportunity for the pupils to show whether or not they had attained each objective; (4) As test items were listed, they were checked by consulting books and other references by recognized authorities in the field of home economics to ascertain that the test items and key of answers agreed with the statements of these authorities.

Since the objectives which were used as the basis for the construction of the test were

[4] Henry E. Garrett, *Statistics in Psychology and Education*, Longman's, Green and Co., New York, 1926, p. 268.

[5] Shen, E., "The Standard Error of Certain Coefficients of Correlations," *Journal of Educational Psychology*, Vol. 15, 1924, pp. 462–465.

[6] Hawkes, Herbert E., Linquist, E. F., Mann, C. R., *The Construction and Use of Achievement Examinations*, Houghton, Mifflin Company, Boston, 1936, p. 21.

taken from the units of instruction that the test purported to measure; and since these objectives were each defined in terms of pupil behavior which might show whether or not the objective had been attained; and since the test items and key of answers were checked by consulting recognized authorities in the field of home economics, the validity of the tests was thereby assured.

Comparison of the Home Economics and Non-Home Economics Groups

In order to discover whether there is any reliable difference in the performance of students receiving home economics instruction, and those not having such instruction, in terms of skills and information, the tests were given to as large and as random a sampling of the two groups as possible. From the results of these tests the average scores with the standard errors of the averages of the scores were computed and the reliabilities of the obtained differences between the averages of the two groups were calculated to establish the significance of the differences of the respective means. The mean or average, the standard deviation and the standard error of a score for each part of the tests are given in Table I.

For the total scores made on the tests, as well as for each part of the tests, the difference in the means of the two groups was found to be always in favor of the home economics group. This is indicated in Table II by plus signs (+) preceding each difference in means, in which the difference was in favor of the home economics group.

Table I

The Mean, Standard Deviation and Standard Error of a Score of Each Part of the Tests for the Home Economics Group and the Non-Home Economics Group

	Home Economics			Non-Home Economics		
Test Parts	Mean[a]	Standard Deviation	Standard Error of a Score	Mean[b]	Standard Deviation	Standard Error of a Score
Total Scores	260.2	±83.	2.30	228.7	±53.2	1.49
Total Home and Family	66.	±15.2	.42	59.1	±14.5	.47
Home Furnishing	13.1	± 4.9	.13	10.4	± 4.4	.14
Home Management	14.7	± 4.9	.10	13.6	± 3.5	.12
Child Development	23.6	± 7.3	.23	21.	± 6.9	.22
The Family	14.3	± 2.6	.09	14.	± 3.6	.11
Health	42.9	± 8.2	.22	40.2	± 8.3	.27
Foods	45.	±11.7	.32	37.8	±10.7	.35
Clothing and Personal Appearance	67.5	±19.0	.53	57.5	±20.5	.58
Related Art	45.	±14.6	.41	34.5	±12.1	.39

[a] N = 1241.
[b] N = 917.

Table II

Difference in Means and Significance of the Difference of Each Part of the Tests for the Home Economics and Non-Home Economics Groups

Test Parts	Difference in Means[a]	Standard Deviation of Differences	Ratio of Significance	Chances in 100
Total Scores	+31.50	±2.747	11.46	100
Home Furnishing	+ 2.72	± .202	13.46	100
Home Management	+ 1.09	± .163	6.68	100
Child Development	+ 2.69	± .328	8.20	100
The Family	+ .31	± .155	2.	98
Total Home and Family	+ 6.85	± .636	10.77	100
Health	+ 2.73	± .352	7.75	100
Foods	+ 7.24	± .462	15.45	100
Clothing and Personal Appearance	+ 9.99	± .792	12.61	100
Related Art	+10.56	± .554	19.06	100

[a] Plus signs (+) before the difference in means indicate that the difference was found to be in favor of the home economics group.

Garrett[7] states, "It is usually customary to take a $\frac{D}{\sigma(diff)}$ of 3 as indicative of complete reliability, since 3 σ includes practically all of the cases in the 'distribution of differences' below the mean. A $\frac{D}{\sigma(diff)}$ greater than 3 is to be taken as just so much added realibility."

In practically all parts of the tests, the ratio of significance of the difference of the means between the two groups indicates complete reliability, since with only one exception, it is greater than 3, and this meets the criterion given in the above quotation. Those parts of the tests which reveal differences of highest reliability are: Part V, Related Art; Part III, Foods; Part I (Sub-Division A), Home Furnishing. For each of these parts the chances that the difference will always be greater than zero in favor of the home economics group are one hundred times in one hundred in each instance. This is also true of the other parts of the tests except that part which covers the unit on Home and Family. However, the difference in this instance is highly significant since the chances are ninety-eight in one hundred that the difference in favor of the home economics group will always be greater than zero.

The ratio of significance of difference in the means of the total scores made on the tests by the two groups is 11.46. This is more than three times the criterion of reliability as given by Garrett[8] and indicates complete reliability, since the chances are one hundred times in one hundred that the difference will always be greater than zero in favor of the home economics group.

[7] Garrett, Henry E., op. cit., p. 133.

[8] Garrett, Henry E., loc. cit.

Since the tests in this study were published and administered with scales for the measurement of attitudes developed through home economics instruction,[9] as part of a cooperative program for the evaluation of home-making instruction in the secondary schools of Oklahoma, it was believed to be of significance, for complete analysis of results of the testing program to determine the relationship between information and skills in home-making, and attitudes toward home-making and family life. Coefficients of correlation were calculated between those items in the two groups of tests which were of comparable content. Table III shows the correlations between the total scores made on the tests of skills and information and total scores of the scales for the measurement of attitudes, and also correlations between the various sections of the tests for the home economics group. Table IV gives similiar data for the non-home economics group.

Positive coefficients of correlation between scores on skills and information and scores on attitudes toward home-making were obtained for both groups. With two exceptions these correlations are higher in every instance for the home economics group than for the non-home economics group. The correlations between scores on skills and information and attitudes for "The Family" and for "Clothing" are higher for the non-home economics group than for the home economics group. The correlation obtained between skills and information and attitudes toward the family is .326 with a probable error of $\pm$ .019 for the non-home economics group and .205 with a probable error of $\pm$.001 for the home eco-

[9] Banks, Anna K., *An Evaluation of Students' Attitudes Developed Through Homemaking Instruction in the Secondary Schools of Oklahoma.* Unpublished Doctor's thesis, University of Oklahoma, 1939.

TABLE III

CORRELATIONS BETWEEN ACHIEVEMENT TESTS AND ATTITUDE SCALES FOR THE HOME ECONOMICS GROUP

Divisions of Tests		Coefficients of Correlation	Probable Error of r
Skills and Information	Attitudes		
Total Scores	Total Scores	.366	.017
Home and Family	Home and Family	.250	.018
Home Furnishing	Aesthetic Values	.758	.008
Child Development	Child Development	.203	.018
The Family	The Family	.146	.019
Health	Health	.178	.001
Foods	Foods	.186	.013
Clothing	Clothing	.205	.001
Related Art	Aesthetic Values	.409	.010

TABLE IV

CORRELATIONS BETWEEN ACHIEVEMENT TESTS AND ATTITUDE SCALES FOR THE NON-HOME ECONOMICS GROUP

Divisions of Tests		Coefficients of Correlation	Probable Error of r
Skills and Information	Attitudes		
Total Scores	Total Scores	.283	.020
Home Furnishing	Aesthetic Values	.215	.021
Home and Family	Home and Family	.192	.021
Child Development	Child Development	.114	.022
The Family	The Family	.326	.019
Health	Health	.104	.022
Foods	Foods	.154	.021
Clothing	Clothing	.678	.012
Related Art	Aesthetic Values	.089	.022

nomics group. In each instance this denotes that while the correlation between skills and information and attitudes is positive it is very low, except in "Clothing", for the non-home economics group in which marked relationship between skills and information and attitudes is evident. The correlation between skills and informaton in Home Furnishing and attitudes toward aesthetic values is .758 for the home economics group, which denotes substantial relationship. For the other parts of the two sets of measures the correlations for the home economics group are low, as well as for the family, a sub-division of Part I; while for Health, Part II, and Clothing, Part III, the correlations indicate indifferent relationships. The correlation between the total scores of the two sets of tests is .283 for the non-home economics group and .366 for the home economics group, the latter, while higher than that of the non-home economics group, indicates only slight relation between skills and information and attitudes developed through home economics instruction. Although this correlation is low, comparison of the ratio of significance in the means of the two groups with that obtained from the attitude scales by Banks[10] reveals that the two ratios are approximately the same being 11.46 and 11.65 respectively. From these findings there is justification for the assumption that in homemaking education there is a positive relationship between information and attitudes.

As pointed out earlier, the correlations between skills and information and attitudes were higher in every instance, except two, for those students who had received home economics instruction than for those students who had not received such instruction. The comparison of the home economics and non-home economics groups in skills and information reveals significant differences in the achievement of the two groups. These differences indicate that home economics instruction is functioning effectively in the development of skills and information.

[10] Banks, Anna K., op. cit., p. 53.

CONCLUSION

The problem of this study was to (1) evaluate the effectiveness of the development of skills and information through home economics instruction in the secondary schools of Oklahoma and (2) construct a series of tests, to be used in a measurement program, that would measure objectively the attainment of the skills and information set up as objectives for home economics instruction in the State Courses of Study in Home-making for the secondary schools of Oklahoma.

The findings from the measurement program reveal: (1) Skills and information, essential for effective home and family life are gained through home economics instruction, which are not acquired as effectively through the usual life experiences of the high school student. (2) The greatest difference between students having home economics instruction and those who have not, is shown in skills and information pertaining to foods, house furnishing, and art in home and clothing. (3) The least difference between these two groups is found in skills and information pertaining to family relations. The significance of the difference for this part of the tests is not high, but it is significant and does indicate high reliability. (4) A comparison of the scores of the achievement tests with the scores of scales designed to measure attitudes developed through home

economics instruction shows in general a positive, but low correlation, between the development of skills and information and the development of desirable attitudes toward home and family life. The correlation between skills and information in home furnishing and attitudes toward aesthetic values is the only one indicating substantial relationship. The lowest correlations between the two sets of tests are found in the units on home and family. These units also show the least difference between the home-economics and non-home economics groups. (5) Correlations for the non-home economics group reveal, on the whole, even less marked relationships between desirable attitudes toward home and family life and skills and information in home-making. However, higher correlations were obtained for this group on clothing and personal appearance, while for the home economics group the correlation is much lower. The same situation was also found to exist for family relations.

It is believed that this study, accordingly, warrants the following recommendations: (1) Home economics instruction can be improved by providing systematic experiences in secondary school curriculum. (2) That less skill and information in house furnishing and art in home and clothing is acquired through usual life experiences than in other phases of homemaking education, which indicates a need for emphasis on these units of instruction in home economics. (3) That the units on food and nutrition are being most effectively taught.

Recommendations

While the findings of this study reveal a significant difference in the relation between achievement of pupils who have received home economics instruction and those who have not had such instruction both in terms of skills and information in home economics and the development of desirable attitudes toward home and family, there is need for a close correlation of home economics with other school subjects in order to eliminate unnecessary overlapping of content, especially in health and money management. Careful analysis of content in these units is also needed to avoid duplication of learnings acquired through out-of-school experiences.

A need for more effective instruction in integrating the development of desirable attitudes and skills and information in "family relations" is evidenced by the slight significance of the difference between the scores made on the tests of skills and information and those made in the same area in the attitude scales.

A STUDY TO DETERMINE THE ERRORS THAT APPEAR IN WRITTEN WORK OF RURAL AND URBAN PUPILS IN CERTAIN SCHOOL SYSTEMS IN KENTUCKY

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Introduction.—The purpose of this study was to determine (1) the errors that appear in the written work of pupils in grades III to XII, inclusive, in certain rural and urban schools in Kentucky; (2) to compare the errors in the different grades, noting similarities and differences; and (3) to determine the persistency of errors throughout the grades in the two groups.

The papers studied in this investigation were written by 5,895 pupils enrolled in six urban and twenty rural school sytems in Kentucky. Papers were written by 300 pupils in each group in each grade with the exception of the rural group in grade XII; papers were written by 195 pupils in this group. The papers were written under the following directions:

1. Pupils may write on any subject they choose.
2. Themes may be any length, but long themes are desired.
3. Pupils should not use a dictionary.
4. Pupils should not obtain help from any source; the work must be the independent work of the pupils.
5. The grade the pupil is in should appear on each paper.
6. If the teachers prefer, papers that have been written as daily exercises, essay examinations, etc., may be submitted, provided the corrections that have been made on the papers were made in such a manner as not to remove or mar the original work of the pupils.

The errors were classified into four groups: (1) punctuation, (2) language, (3) grammar, and (4) spelling. The division between errors in grammar and language was made on an arbitary basis, but, for the most part, errors in grammar were errors that violated some grammatical rule. These groups were broken down into 164 different categories and tabulated under various headings in each group. Errors that were made by rural pupils were tabulated separately from errors made by urban pupils. These tabulations were recorded side by side for comparative purposes.

The Findings.—The rural group made a total of 37,758 errors, an average of 13.4 errors per pupil. The urban group made a total of 28,619 errors, an average of 9.5 errors per pupil.

Except for the fact that the rural group consistently made more errors than the urban group, there was little difference in the types of errors made by the two groups. The difference was so small, in fact, that it is doubtful whether the comparison of any two groups—rural with rural or urban with urban—would show any greater similarity.

Errors in punctuation ranged from 49.179 to 68.658 per cent of the total number of errors made by each group in all grades; errors in language, from 8.069 to 16.343 per cent; errors in grammar, from 9.334 to 15.802 per cent; and, errors in spelling, from 11.699 to 35.127 per cent of the total number of errors made by each group in all grades. The percentages are presented in Table I.

GRADE III

Errors Found.—The rural group in grade III made 3,555 errors, an average of 11.85 errors per pupil. The urban group made 3,220 errors, an average of 10.73 errors per pupil. One hundred eight different types of errors were noted, but the most of these errors were of low frequencies. Thirteen errors, each of which accounted for one per cent or more of the total number of errors made by each group, were responsible for 69.565 per cent of all the errors made by the rural group and 73.347 per cent of all the errors made by the urban group. These errors are shown in Table II.

TABLE I

THE PERCENTAGE OF ERRORS MADE BY EACH GROUP IN PUNCTUATION, LANGUAGE, GRAMMAR, AND SPELLING

Grade	Punctuation Group		Grade	Language Group	
	Rural	Urban		Rural	Urban
III	49.179	50.378	III	16.343	14.858
IV	54.228	49.672	IV	9.478	10.053
V	59.078	58.785	V	9.378	11.339
VI	58.679	56.401	VI	8.150	10.292
VII	61.696	44.639	VII	10.792	10.861
VIII	63.931	63.882	VIII	12.160	12.350
IX	59.271	58.563	IX	10.067	13.435
X	68.658	62.529	X	9.702	8.069
XI	68.219	63.196	XI	8.500	9.598
XII	63.217	65.284	XII	11.167	9.161
	Grammar			Spelling	
III	11.718	10.825	III	22.729	23.860
IV	9.471	11.268	IV	22.775	28.473
V	12.696	11.278	V	19.840	18.530
VI	11.695	11.248	VI	21.844	21.499
VII	12.220	9.334	VII	15.303	35.127
VIII	9.294	12.096	VIII	14.563	11.699
IX	16.383	15.802	IX	14.123	12.154
X	9.881	14.818	X	11.760	14.585
XI	10.474	13.351	XI	12.805	13.902
XII	12.867	13.969	XII	12.744	11.589

TABLE II

THIRTEEN ERRORS EACH OF WHICH ACCOUNTED FOR MORE THAN ONE PER CENT OF ALL THE ERRORS MADE BY THE RURAL AND URBAN PUPILS IN GRADE III AND THE PER CENT EACH ERROR WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP

Error	Per Cent of Total Number of Errors	
	Rural	Urban
1. Misspellings	22.588	23.860
2. Period omitted at the end of declarative and imperative sentences	11.617	12.814
3. First word of every sentence not capitalized	8.776	10.363
4. Unnecessary words at the beginning of a sentence	4.276	4.933
5. Common nouns capitalized	3.685	5.461
6. Present tense of a verb used where the past tense was needed	3.572	2.482
7. No space between title and body	3.404	1.210
8. Quotation marks omitted	2.785	2.668
9. Verbs capitalized	2.757	2.048
10. Period where no punctuation was needed	1.772	1.086
11. Important words in a title not capitalized	1.716	3.630
12. No indentation of paragraphs	1.407	1.551
13. Sentences too long for unity	1.210	1.241
Total	69.565	73.347

Punctuation.—Errors in punctuation, accounting for more than one per cent of the total number of errors made by each group, in the order of frequency of occurrence, were as follows: (1) period omitted at the end of declarative and imperative sentences; (2) first word of every sentence not capitalized; (3) common nouns capitalized; (4) quotation marks omitted; (5) a period where no punctuation was needed; (6) verbs capitalized; and, (7) important words in a title not capitalized.

Language.—Language errors, accounting for highest frequencies of occurrence, in order of highest frequencies, were as follows: (1) unnecessary words at the beginning of a sentence; (2) no space between title and body of composition; (3) no indentation of paragraphs; and, (4) sentences too long for unity.

Grammar.—The only grammatical error responsible for more than one per cent of the total number of errors made by each group was present tense of a verb used where the past tense was needed.

Spelling.—Misspelled words accounted for all errors in spelling occurring with a frequency greater than one per cent.

Intermediate Grades

Errors Found.—The total number of errors made by the rural group in the intermediate grades (grades IV, V, and VI) exceeded the total number of errors made by the urban group. The rural group made a total of 13,135 errors, an average of 14.59 errors per pupil; the urban group made 10,505 errors, an average of 11.67 errors per pupil.

Although 117 different types of errors were noted, only 63 different types were found in each group in each grade. Table III shows the errors common to each group and the per cent each error was of the total number of errors made. These 63 errors were responsible for from 87.555 to 95.265 per cent of the total number of errors made by each group.

Punctuation.—The rural group in every grade made a higher percentage of errors in punctuation than the urban group. The average percentage of errors for the two groups was 57.328 and 54.952, respectively.

Errors in punctuation having high frequencies were: (1) failure to use a period at the end of declarative and imperative sentences; (2) failure to begin the first word of a sentence with a capital letter; (3) nouns capitalized; (4) verbs capitalized; (5) failure to capitalize important words in the title; (6) failure to use a comma to separate clauses introduced by but, for, because, etc.; (7) failure to use a comma to set off introductory clauses; (8) failure to use a comma to separate words used in a series; and, (9) failure to use a comma to set off parenthet-

Table III

The Per Cent Each of Sixty-three Errors, Found in Both Rural and Urban Groups in Grades IV, V, and VI, Was of the Total Number of Errors Made by Each Group

Error	Grade IV		V		VI	
	Rural	Urban	Rural	Urban	Rural	Urban
	Per Cent		Per Cent		Per Cent	
I. Mistakes in Punctuation						
Failure to capitalize:						
1. First word in every sentence	10.164	8.580	8.180	9.513	9.543	8.389
2. Important words in title	1.587	0.734	0.699	9.934	1.386	2.886
3. Proper nouns	2.032	3.026	0.941	1.099	0.188	0.115
Words capitalized unnecessarily:						
4. Nouns	5.014	5.612	7.077	7.176	9.026	6.493
5. Verbs	3.872	1.381	4.547	3.381	5.883	1.847
6. Adjectives	1.045	0.881	1.237	1.292	1.739	0.836
7. Conjunctions	0.096	0.293	0.080	0.412	0.141	0.173
8. Pronouns	1.355	0.440	0.672	0.522	0.822	0.375
9. Adverbs	0.774	0.146	0.592	0.439	0.658	0.346
10. Prepositions	0.290	0.176	0.242	0.192	0.423	0.144
Total	26.229	21.269	24.267	24.970	29.779	21.604
Failure to use comma:						
11. To set off an introductory phrase	0.193	0.382	0.484	0.412	0.564	1.673
12. To set off introductory words	0.522	0.528	0.565	0.742	0.728	1.385
13. To set off introductory clauses	1.316	1.146	3.067	2.227	3.385	4.473
14. To set off parenthetical expressions	0.968	1.616	1.614	1.237	1.269	1.962
15. To separate words used in a series	2.981	1.557	1.264	3.739	0.634	2.222
16. To separate clauses in a series	0.116	0.264	0.403	0.879	0.587	0.375
17. To separate clauses introduced by for, but, because, and, etc.	2.020	4.496	2.179	3.051	0.896	3.232
18. To set off words of direct address	0.464	0.499	0.753	0.522	0.352	0.202
19. To set off words used in apposition	0.329	0.558	0.753	0.164	0.305	0.259
20. To separate city from state	0.038	0.146	0.107	0.109	0.376	0.144
21. To separate a short quotation from the remainder of the sentence	0.580	0.734	1.076	0.989	0.235	0.865

TABLE III (Continued)

THE PER CENT EACH OF SIXTY-THREE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS IN GRADES IV, V, AND VI, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP

Error	Grade IV		Grade V		Grade VI	
	Rural	Urban	Rural	Urban	Rural	Urban
	Per Cent		Per Cent		Per Cent	
Incorrect use of comma:						
22. Where no punctuation was needed	0.135	0.029	0.080	0.192	0.211	0.086
Total	10.662	11.955	12.345	14.263	9.542	16.878
Failure to use a period:						
23. At the end of all declarative and imperative sentences	11.442	10.020	12.271	11.410	9.967	8.513
Total	11.442	10.020	12.271	11.410	9.967	8.513
Failure to use interrogation point:						
24. After interrogative statements	0.464	0.675	0.242	0.824	0.775	0.288
Total	0.464	0.675	0.242	0.824	0.775	0.288
Failure to use exclamation point:						
25. After expressions of joy, grief, sorrow, etc.	0.116	0.117	0.242	0.467	0.141	0.230
Total	0.116	0.117	0.242	0.467	0.141	0.230
Failure to use a semi-colon:						
26. To separate clauses of a compound sentence not joined by a conjunction and which have as the first word of the second clause one of the following words: thus, however, never-the-less, therefore, accordingly, besides, still, also, then, otherwise, consequently	0.077	0.352	0.188	0.109	0.047	0.173
27. Between clauses of a compound sentence not joined by a conjunction	0.154	0.235	1.184	0.522	0.916	0.952
Total	0.231	0.587	1.372	0.631	0.963	1.125
Failure to use apostrophe:						
28. In the formation of the possessive	0.909	0.822	0.592	1.044	0.094	0.144
29. In contractions	0.212	0.176	0.269	0.302	0.987	0.548
Apostrophe used incorrectly:						
30. To form plural	0.116	0.029	0.188	0.027	0.164	0.144
Total	1.237	1.027	1.049	1.373	1.245	0.836
Failure to use quotation marks:						
31. To enclose quoted matter	2.110	2.027	3.148	3.491	1.292	0.952
Total	2.110	2.027	3.148	3.491	1.292	0.952
II. Language Errors						
Lack of coherence due to omissions:						
32. Nouns	0.271	0.382	0.349	0.412	0.305	0.375
33. Verbs	0.619	0.822	0.699	1.017	0.705	0.750
34. Relative pronouns	0.116	0.029	0.026	0.109	0.117	0.086
35. Personal pronouns	0.232	0.382	0.349	0.192	0.470	0.230
36. Prepositions	0.135	0.293	0.242	0.247	0.117	0.230
37. Conjunctions	0.077	0.088	0.026	0.274	0.023	0.057
38. Adverbs	0.135	0.029	0.080	0.109	0.141	0.144
39. Adjectives other than articles	0.135	0.176	0.161	0.164	0.141	0.202
Total	1.720	2.201	1.932	2.524	2.019	2.074

TABLE III (Continued)

THE PER CENT EACH OF SIXTY-THREE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS IN GRADES IV, V, AND VI, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP

Error	Grade IV Rural	Grade IV Urban	Grade V Rural	Grade V Urban	Grade VI Rural	Grade VI Urban
	Per Cent		Per Cent		Per Cent	
Lack of unity due to:						
40. Dependent clauses written as independent clauses	0.096	0.264	0.215	0.412	0.094	0.086
41. Sentences too long for unity	1.548	0.764	0.161	0.604	0.517	0.288
42. Wrong word used	0.038	0.088	0.376	0.410	0.399	0.173
Total	1.682	1.116	0.752	1.426	1.010	0.547
Redundancy:						
43. Unnecessary words at the beginning of a sentence	2.149	2.585	2.206	2.089	1.589	1.645
44. Unnecessary words within a sentence	0.619	0.411	0.726	0.824	0.705	0.894
Total	2.768	3.996	2.932	2.913	2.303	2.539
Errors in form:						
45. No space between title and body of composition	1.181	0.499	1.345	1.484	0.869	1.414
Total	1.181	0.499	1.345	1.484	0.869	1.414
Mistakes in paragraphing:						
46. No indentation	1.277	.999	0.807	1.237	1.081	1.962
Total	1.277	0.999	0.807	1.237	1.081	1.962
47. Papers not readable	0.116	0.382	0.107	0.109	0.023	0.115
Total	0.116	0.382	0.107	0.109	0.023	0.115
III. Grammatical Errors						
48. Present tense of a verb used where the past tense was needed	2.652	2.174	1.910	2.337	1.810	2.453
49. Past tense of a verb used where the present tense was needed	0.116	0.235	0.026	0.192	0.164	0.086
50. Wrong verbs and wrong verb forms	0.174	0.558	0.888	0.632	0.822	0.779
51. Double negatives	0.077	0.146	0.188	0.134	0.117	0.144
52. Singular noun used where a plural noun was needed	0.929	0.382	0.349	1.264	0.282	0.932
53. Plural subject followed by a singular verb	0.774	0.793	1.264	1.539	1.010	0.952
54. Singular subject followed by a plural verb	0.658	0.764	0.538	0.907	0.235	0.230
55. Subject of a verb in the objective case	0.077	0.146	0.161	0.082	0.305	0.028
56. Adjective used as an adverb	0.174	0.235	0.215	0.384	0.728	0.519
57. Pronoun used as an adverb	0.038	0.058	0.188	0.137	0.047	0.115
58. Figures of less than three digits used instead of words	0.619	0.881	0.941	0.632	1.128	1.038
59. Symbol "&" used for "and"	0.174	0.088	0.914	0.054	0.564	0.577
60. "A" used for "an"	0.484	0.910	0.215	0.604	0.352	0.230
61. "To" used for "too"	0.425	0.852	0.618	0.604	0.446	0.404
Total	7.371	8.222	8.415	9.502	8.010	7.267
IV. Misspelling						
62. Words misspelled	26.292	28.269	19.456	18.201	20.310	20.721
63. Words not divided on syllable	0.367	0.058	0.322	0.302	0.775	0.490
Total	26.659	28.327	19.778	18.503	21.085	21.211
Grand Total	95.265	93.469	91.004	95.127	90.104	87.555

ical expressions; and, (10) failure to use a comma to separate clauses used in a series.

Language.—The urban group in each grade made a higher percentage of language errors than the rural group. The average percentage for the rural and urban groups was 9.002 and 10.561, respectively.

Language errors having highest frequency, in the order of high frequency, were: (1) redundant expressions; (2) lack of coherence due to omissions of different parts of speech; (3) no indentation of paragraphs; (4) no space between title and body of composition; and, (5) lack of unity due to faulty sentence structure.

Grammar.—The rural group in grade IV made a lower percentage of errors in grammar than the urban group, but the rural groups in grades V and VI made a higher percentage than did the urban groups in these respective grades. The average percentage of errors in grammar for the two groups was 11.254 and 11.265 for the rural and urban groups, respectively.

Grammatical errors of highest frequencies, in the order of high frequency, were as follows: (1) present tense of a verb used where the past tense was needed; (2) plural subject followed by a singular verb; (3) figures of less than three digits used instead of words; (4) plural subject followed by a singular verb; (5) wrong verb or wrong verb form used; (6) "to" used for "too"; (7) "a" used for "an"; (8) symbol "&" used for "and"; (9) adjective used as an adverb; (10) the use of the past tense where the present tense should have been used; and, (11) the use of double negatives.

Spelling.—The rural group in grade V made a higher percentage of errors in spelling than the urban group, but the rural groups in grades IV and VI made a lower percentage of errors than the urban groups in these respective grades. The average percentage was 21.486 and 22.834 for the rural and urban groups, respectively.

Words misspelled and words not divided on the syllable were responsible for the errors made by each group in every grade.

Junior High School Grades

Errors Found.—The rural group in the junior high school (grades VII, VIII, and IX) made twice as many errors as the urban group, the number of errors being 4,764 and 2,024 for the two groups, respectively. The average error per rural pupil was 15.88; the average error per urban pupils was 6.74.

One hundred eighteen different types of errors were noted, but only seventy-five different types, shown in Table IV, were found in each group in all grades.

Punctuation.—The rural group, in each grade, made a higher percentage of errors in punctuation than the urban group. The average percentages for the two groups were 61.633 and 55.695, respectively.

Punctuation errors in order of highest frequencies were: (1) failure to begin the first word of each sentence with a capital letter; (2) nouns capitalized; (3) failure to capitalize the important words in a title; (4) failure to place a period at the end of all declarative and imperative sentences; (5) failure to capitalize proper nouns; (6) failure to use a comma to set off introductory clauses; (7) failure to use a comma to separate clauses introduced by but, and, for, because, etc.; (8) adjectives capitalized; (9) failure to use a comma to set off introductory words; (10) comma used as end punctuation; (11) failure to use a comma to separate independent phrases from the remainder of the sentence; (12) failure to use a comma to separate words used in a series; (13) failure to use a comma to separate clauses used in a series; (14) failure to use a comma to separate independent words from the remainder of the sentence; and, (15) failure to use a comma to set off words used in apposition.

Language.—Urban pupils in each grade made a higher percentage of errors in language than rural pupils. The average for the two groups was 12.215 and 11.006 per cent, respectively.

Language errors of highest frequency were: (1) errors in syntactical redundancy; (2) errors due to faulty construction of sentences; (3) errors due to omission of various parts of speech; (4) errors in form; and, (5) errors in paragraphing.

Grammar.—The percentage of errors in grammar made by rural pupils in grades VII and VIII was slightly below the percentage made by respective urban groups, but the rural pupils in grade IX made a slightly higher percentage than the respective urban group. Errors with highest frequencies, in the

TABLE IV

THE PER CENT EACH OF SEVENTY-FIVE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS, IN GRADES VII, VIII, AND IX, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP

Error	Grade VII		VIII		IX	
	Rural	Urban	Rural	Urban	Rural	Urban
	Per Cent		Per Cent		Per Cent	
I. Mistakes in Punctuation						
Failure to capitalize:						
1. First word in every sentence	9.026	6.916	8.341	7.343	9.056	8.553
2. Important words in a title	1.532	0.741	0.635	0.398	0.473	0.497
3. Proper nouns	1.889	1.086	1.194	0.862	2.342	3.222
Words capitalized unnecessarily:						
4. Nouns	7.641	5.138	9.015	12.851	7.163	7.176
5. Verbs	3.401	4.693	4.931	7.144	3.221	2.548
6. Adjectives	2.540	1.383	1.984	1.725	0.833	0.644
7. Conjunctions	0.336	0.274	0.057	0.199	0.292	0.263
8. Pronouns	0.462	0.444	0.423	0.331	0.337	1.318
9. Adverbs	0.966	0.938	1.040	0.331	0.337	0.234
10. Prepositions	0.273	0.098	0.115	0.265	0.112	0.292
Total	28.066	21.711	28.735	21.449	25.166	25.697
Failure to use a comma:						
11. To set off an introductory phrase	2.330	1.828	2.504	2.366	5.136	6.326
12. To set off introductory words	1.574	0.444	2.350	1.260	3.604	1.903
13. To set off introductory clauses	3.967	4.249	3.525	1.437	0.135	0.878
14. To separate words used in a series	0.693	0.543	1.290	2.676	2.590	0.117
15. To separate clauses used in a series	0.756	0.197	0.770	0.486	1.284	2.577
16. To separate clauses introduced by but, for, and, because, etc.	1.511	0.839	3.178	1.459	2.365	1.318
17. To set off words of direct address	0.294	0.197	0.173	0.442	0.675	1.288
18. To set off words used in apposition	0.798	0.444	0.789	0.221	2.072	1.258
19. To separate city from state	0.126	0.345	0.481	0.420	0.202	0.146
20. To separate independent words from remainder of sentence	0.294	0.444	1.598	1.349	0.202	1.728
21. To separate independent phrases from remainder of sentence	0.210	0.197	3.024	2.234	0.315	1.464
22. To separate clauses not separated by but, for, because, etc.	0.966	0.938	0.192	0.110	0.923	1.054
23. To separate a short quotation from remainder of sentence	0.462	0.148	0.385	0.353	0.337	0.908
Comma used incorrectly:						
24. As end punctuation	1.511	0.790	2.003	1.260	1.013	2.489
Total	15.492	11.603	22.262	16.073	20.853	23.454
Failure to use a period:						
25. At the end of all declarative and imperative sentences	8.438	4.940	6.858	7.962	7.817	2.841
26. After abbreviations	0.042	0.098	0.443	0.841	0.123	0.205
Period used incorrectly:						
27. Where no punctuation was needed	0.483	0.098	0.231	0.486	1.284	1.200
Total	8.963	5.136	7.532	9.289	9.224	4.246
Failure to use interrogation point:						
28. After interrogative statements	0.273	0.247	0.654	1.504	0.270	0.322
Total	0.273	0.247	0.654	1.504	0.270	0.322

TABLE IV (Continued)

THE PER CENT EACH OF SEVENTY-FIVE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS, IN GRADES VII, VIII, AND IX, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP

Error	Grade VII Rural	VII Urban	VIII Rural	VIII Urban	IX Rural	IX Urban
	Per Cent		Per Cent		Per Cent	
Failure to use semicolon:						
29. To separate clauses of a compound sentence not joined by a conjunction and which have as the first word of the second clause one of the following: thus-however, never-the-less, therefore, accordingly, besides, still, also, then, otherwise, consequently, etc.	0.126	0.148	0.288	0.752	0.157	0.234
30. Between clauses of a compound sentence not joined by a conjunction	0.672	0.247	0.404	0.685	0.315	0.702
31. Between two or more coordinate members of a simple, complex, or compound sentence even when joined by conjunctions when those members, or some of them have commas within themselves	0.105	0.098	0.096	0.066	0.247	0.878
Total	0.903	0.493	0.788	1.503	0.719	1.814
Failure to use apostrophe:						
32. In the formation of the possessive case	0.861	1.185	1.252	0.420	1.058	0.615
33. In contractions	0.021	0.049	0.134	0.707	0.022	0.087
Total	0.882	1.234	1.386	1.127	1.080	0.702
Failure to use quotation marks:						
34. To enclose quoted matter	1.913	0.444	1.020	0.906	0.856	1.318
Total	1.913	0.444	1.020	0.906	0.856	1.318
Failure to use hyphen:						
35. To divide a word at the end of a line	0.378	0.642	0.192	0.243	0.180	0.175
36. In compound words	0.441	0.839	0.269	0.597	0.202	0.146
Total	0.819	1.481	0.461	0.840	0.382	0.321
II. Language Errors						
Lack of coherence due to omissions:						
37. Nouns	0.462	0.444	0.231	0.353	0.473	0.966
38. Verbs	0.756	0.494	0.558	0.442	0.382	0.732
39. Prepositions	0.441	0.197	0.443	0.243	0.247	0.029
40. Conjunctions	0.021	0.148	0.057	0.022	0.087	0.117
41. Articles	0.084	0.494	0.096	0.154	0.157	0.029
Total	1.764	1.777	1.385	1.214	1.346	1.873
Lack of unity due to faulty sentence structure:						
42. Dependent clauses written as if they were independent	0.357	1.136	0.539	0.685	0.810	0.732
43. Phrases written as sentences	0.273	0.197	0.077	0.243	0.337	0.908
44. Phrases given wrong position in a sentence	0.084	0.148	0.038	0.088	0.180	0.263
45. Sentences too long	0.420	0.296	1.098	0.663	1.802	2.138
46. Wrong word used	0.231	0.148	0.134	0.243	0.225	0.322
Total	1.465	1.925	1.886	1.922	3.354	4.363
Redundancy:						
47. Unnecessary words at the beginning of sentence	2.540	4.298	3.024	1.172	2.004	2.079
48. Repetition of words	0.273	0.098	0.154	0.353	0.157	0.615
49. Unnecessary words within sentence	0.693	0.494	0.654	0.752	0.901	1.698
50. Sentences ended with prepositions	0.252	0.543	0.269	0.442	0.202	0.644
Total	3.758	5.433	4.101	2.719	3.264	5.036

TABLE IV (Continued)

THE PER CENT EACH OF SEVENTY-FIVE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS, IN GRADES VII, VIII, AND IX, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP

Error	Grade VII		VIII		IX	
	Rural	Urban	Rural	Urban	Rural	Urban
	Per Cent		Per Cent		Per Cent	
Errors in form:						
51. No space between title and body	1.889	0.148	0.635	0.641	1.148	1.230
Total	1.889	0.148	0.635	0.641	1.148	1.230
Mistakes in paragraphing:						
52. No indentation	0.903	0.444	0.789	0.973	0.292	0.292
Total	0.903	0.444	0.789	0.973	0.292	0.292
III. Grammatical Errors						
53. Present tense of verb used where past tense was needed	1.994	1.581	1.598	1.791	1.396	3.602
54. Past tense of verb used where present tense was needed	0.168	0.148	0.116	0.132	0.045	0.146
55. Past tense used where past participle was needed	0.105	0.395	0.327	0.176	0.608	0.087
56. Wrong verbs and wrong verb forms	0.273	0.592	0.732	0.243	0.270	0.497
57. Double negative	0.210	0.049	0.211	0.176	0.202	0.058
58. Singular noun used where a plural noun was needed	0.945	0.197	0.520	0.928	0.337	1.171
59. Plural noun used where a singular noun was needed	0.063	0.197	0.173	0.088	0.090	0.380
60. Plural subject followed a singular verb	1.071	0.839	0.500	1.349	1.351	1.142
61. Singular subject followed by a plural verb	0.336	0.197	0.288	0.641	0.608	0.761
62. Plural antecedent used with singular noun or pronoun	0.294	0.247	0.308	0.663	0.540	1.054
63. Singular antecedent used with plural noun or pronoun	0.126	0.049	0.019	0.176	0.900	0.205
64. Adjective used as an adverb	0.756	0.296	0.674	0.739	0.473	0.410
65. Adverb used as an adjective	0.126	0.098	0.096	0.088	0.067	0.117
66. Adjective used as a pronoun	0.063	0.049	0.096	0.154	0.180	0.702
67. Double preposition	0.168	0.197	0.019	0.044	0.045	0.029
68. "A" used for "an"	0.147	0.247	0.154	0.376	0.225	0.205
69. Figures of less than three digits used instead of words	2.225	0.642	1.637	4.401	2.815	1.816
70. Symbol "&" used for "and"	1.113	0.345	2.061	0.774	4.798	1.493
71. "To" used for "two"	0.315	0.395	0.385	0.376	0.247	0.205
72. "To" used for "two"	0.063	0.247	0.019	0.022	0.022	0.117
Total	10.561	7.007	9.933	13.337	15.219	14.197
IV. Mistakes in spelling:						
73. Words misspelled	14.442	32.608	14.005	11.391	13.043	11.657
74. Words not divided on syllable	0.609	1.729	0.115	0.176	0.698	0.234
75. Words of one syllable divided	0.252	0.790	0.443	0.132	0.382	0.263
Total	15.303	35.127	14.563	11.699	14.123	12.154
Grand Total	92.854	94.210	95.130	95.196	96.296	96.019

order of frequency, were: (1) figures of less than three digits used instead of words; (2) present tense of a verb used where the past tense was needed; (3) the use of the symbol "&" for "and"; (4) the use of the double negative; (5) plural subject followed by a singular verb; (6) adjective used as an adverb; (7) plural antecedent used with a singular noun or pronoun; (8) plural noun used where a singular noun was needed; (9) subject followed by a plural verb; (10) wrong verb or wrong verb form; (11) past tense used where the past participle was needed; (12) "to" used for "too"; (13) singular an-

tecedent used with a plural noun or pronoun; (14) "a" for "an"; and, (15) adjective used as a pronoun.

Spelling.—The urban group in grades VII and VIII made a higher percentage of errors in spelling than the rural group in these respective grades, but the rural group made a slightly higher percentage than the urban group in grade IX. The misspelling of words was responsible for the most of the words, although each group failed to divide words on the syllable and divided one-syllable words.

Senior High School Grades

Errors Found.—The total number of errors made by the rural group in the senior high school grades (grades X, XI, and XII) was 8,259, an average of 10.38 errors per pupil. The urban group made a total of 6,899 errors, an average of 7.66 errors per pupil.

One hundred sixteen different types of errors were found, but only sixty-three different types were found in each group in every grade. Table V shows the sixty-three errors common to both rural and urban groups in each grade.

Punctuation.—Rural pupils made a higher percentage of errors in punctuation than urban pupils. The average percentage was 66.631 and 63.669 for the rural and urban groups, respectively.

Punctuation errors having highest percentage of frequencies, in the order of frequency, were as follows: (1) the capitalization of nouns; (2) failure to use a comma to set off an introductory phrase; (3) failure to use a capital letter to begin the first word of every sentence; (4) failure to use a comma to set off introductory clauses; (5) failure to put a period at the end of all declarative and imperative sentences; (6) verbs capitalized; (7) failure to use a comma to separate clauses introduced by but, for, and, because, etc; (8) comma used as end punctuation; (9) failure to use a comma to set off introductory words; (10) failure to use a comma to set off introductory words; (11) failure to use a comma to separate independent phrases from the remainder of the sentence; (12) failure to use the apostrophe in the formation of the possessive; (13) failure to capitalize the important words in a title; (14) failure to use a comma to separate city from state; (15) failure to capitalize proper nouns; (16) adverbs capitalized; (17) failure to use a semicolon between clauses of a compound sentence not joined by a conjunction; (18) failure to use a comma to separate clauses used in a series; (19) conjunctions capitalized; and, (20) failure to use a semicolon between two or more coordinate members of a simple, complex, or compound sentence even when joined by conjunctions, when those members, or some of them, have commas within themselves.

Language.—Pupils in the rural group made a higher percentage of errors in language than pupils in the urban group. The percentages were 9.789 and 8.943 for the rural and urban groups, respectively.

Errors in language, having highest frequencies, were: (1) errors in syntactical redundancy; (2) lack of coherence due to omission of various parts of speech; (3) lack of unity due to faulty sentence construction; (4) no space between title and body of composition; (5) no indentation of paragraphs.

Grammar.—The percentage of errors in grammar made by urban pupils exceeded the percentage made by rural pupils. Grammatical errors accounted for 14.046 per cent of the total number of errors made by the urban group and 11.074 per cent of the total number made by the rural group.

Grammatical errors which appeared with highest frequencies were as follows: (1) present tense of a verb used where the past tense was needed; (2) singular noun used where a plural noun was needed; (3) figures of less than three digits used instead of words; (4) plural subject followed by a singular verb; (5) plural antecedent used with a singular noun or pronoun; (6) adjective used as an adverb; (7) wrong verb or wrong form of a verb used; (8) mistakes in the use of the relative pronoun; (9) singular antecedent used with a plural noun or pronoun; and, (10) past tense used where the past participle was needed.

Spelling.—The percentage of errors in spelling made by the urban group exceeded the percentage made by the rural group by 0.923 per cent, the percentages being 13.359 and 12.436 for the urban and rural groups, respectively.

Misspelled words and words not divided on the syllables accounted for all the errors in spelling made by each group in all grades.

TABLE V

THE PER CENT EACH OF SIXTY-THREE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS IN GRADES X, XI, AND XII, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP IN EACH GRADE

Error	Grade X Rural	Grade X Urban	Grade XI Rural	Grade XI Urban	Grade XII Rural	Grade XII Urban
	Per Cent		Per Cent		Per Cent	
I. Mistakes in Punctuation						
Failure to capitalize:						
1. First word in every sentence	8.955	6.362	4.699	4.520	4.353	4.757
2. Important words in a title	2.985	1.241	1.004	0.496	0.505	0.354
3. Proper nouns	1.784	1.336	0.681	0.725	0.505	0.759
Words capitalized unnecessarily:						
4. Common nouns	9.496	8.844	6.994	10.107	16.845	16.144
5. Verbs	6.125	2.870	1.686	2.810	2.019	6.630
6. Conjunctions	0.154	0.853	1.399	1.493	0.126	0.506
7. Adverbs	1.235	0.776	0.310	0.810	0.820	1.569
Total	30.674	22.282	17.539	20.961	25.173	30.719
Failure to use comma:						
8. To set off an introductory phrase	5.558	6.478	13.343	9.467	2.965	3.745
9. To set off introductory words	2.265	1.862	2.188	2.217	1.893	2.328
10. To set off introductory cluases	5.327	4.732	7.209	4.094	5.678	4.099
11. To set off parenthetical expressions	4.297	5.043	0.753	0.682	1.703	0.911
12. To separate words used in a series	1.518	0.543	0.861	0.256	0.694	0.405
13. To separate clauses used in a series	0.129	0.543	0.897	0.299	0.694	2.176
14. To separate clauses introduced by but, for, and, because, etc.	1.158	2.405	4.304	1.834	4.227	2.227
15. To separate city from state	1.467	1.164	0.538	0.682	0.505	1.468
16. To separate independent phrases from the remainder of the sentence	0.515	2.483	1.506	2.388	3.975	1.316
17. To separate clauses not introduced by but, for, because, etc.	0.798	0.272	0.430	0.554	1.009	0.405
Comma used incorrectly:						
18. As end punctuation	2.342	3.413	3.228	1.279	0.757	2.935
19. Where no punctuation was needed	0.154	0.116	0.395	0.341	0.315	0.354
Total	25.528	29.054	35.616	24.093	24.415	22.369
Failure to use period:						
20. At the end of delarative and imperative sentences	4.941	2.909	4.340	6.269	2.713	2.227
Period used incorrectly:						
21. Where no punctuation was needed	0.154	0.116	0.395	0.341	0.315	0.354
Total	5.175	3.103	5.057	7.676	3.218	2.379
Failure to use interrogation point:						
22. After interrogative statements	0.180	0.349	0.466	0.341	0.568	0.354
Total	0.180	0.349	0.466	0.341	0.568	0.354
Failure to use semicolon:						
23. To separate clauses of a compound sentence not joined by a conjunction and which have as the first word of the second clause one of the following: thus, however, never-the-less, therefore, accordingly, besides, still, also, then, otherwise, consequently, etc.	0.103	0.194	0.466	0.256	0.505	0.253
24. Between clauses of a compound sentence not joined by a conjunction	1.338	1.823	0.430	0.384	0.631	0.304

TABLE V (Continued)

THE PER CENT EACH OF SIXTY-THREE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS IN GRADES X, XI, AND XII, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP IN EACH GRADE

Error	Grade X		Grade XI		Grade XII	
	Rural	Urban	Rural	Urban	Rural	Urban
	Per Cent		Per Cent		Per Cent	
25. Between two or more co-ordinate members of a simple, complex, or compound sentence even when joined by conjunctions, when those members or some of them have commas within themselves	0.283	1.164	0.897	0.299	1.767	0.354
Total	1.724	3.181	1.793	0.939	2.093	0.911
Failure to use apostrophe:						
26. In the formation of the possessive case	1.055	0.815	2.044	2.516	0.946	1.265
Total	1.055	0.815	2.044	2.516	0.946	1.265
Apostrophe used incorrectly:						
27. To form plural	0.051	0.166	0.681	1.279	0.442	0.051
Total	1.106	0.931	2.725	3.795	1.388	1.316
Failure to use quotation marks:						
28. To enclose quoted matter	0.437	0.621	0.430	0.299	0.568	0.354
Total	0.437	0.621	0.430	0.299	0.568	0.354
Failure to use hyphen:						
29. In compound words	0.051	2.172	0.108	0.128	0.126	0.101
Total	0.051	2.172	0.108	0.128	0.126	0.101
II. Language Errors						
Lack of coherence due to omissions:						
30. Nouns	0.540	0.194	0.610	0.597	0.568	0.658
31. Verbs	0.721	0.504	0.753	1.109	0.505	0.962
32. Relative pronouns	0.154	0.272	0.215	0.043	0.252	0.253
33. Personal pronouns	0.489	0.231	0.359	0.171	0.126	0.455
34. Prepositions	0.103	0.116	0.753	0.725	0.315	0.860
35. Articles	0.103	0.116	0.036	0.299	0.631	0.709
Total	2.110	1.433	2.726	2.944	2.397	3.897
Lack of unity due to faulty sentence construction:						
36. Dependent clauses written as independent clauses	0.283	0.698	0.538	0.768	1.325	0.658
37. Phrases written as sentences	0.643	0.698	0.789	0.640	0.631	0.354
Total	0.926	1.396	1.327	1.408	1.956	1.012
Redundant expressions:						
38. Unnecessary words at the beginning of a sentence	1.621	2.252	1.578	1.663	1.893	2.075
39. Has got, have got, etc.	0.051	0.038	0.143	0.128	0.063	0.101
40. Sentences ended with prepositions	0.103	0.194	0.215	0.341	0.189	0.101
41. Unnecessary words within sentence	0.463	0.427	0.430	1.023	0.505	0.202
42. Other redundant expressions	0.154	0.301	0.197	0.085	0.505	0.051
Total	2.392	3.212	2.563	3.240	3.155	2.530

TABLE V (Continued)

THE PER CENT EACH OF SIXTY-THREE ERRORS, FOUND IN BOTH RURAL AND URBAN GROUPS IN GRADES X, XI, AND XII, WAS OF THE TOTAL NUMBER OF ERRORS MADE BY EACH GROUP IN EACH GRADE

Error	Grade X		Grade XI		Grade XII	
	Rural	Urban	Rural	Urban	Rural	Urban
	Per Cent		Per Cent		Per Cent	
Errors in form:						
43. No space between title and body of composition	2.239	1.319	0.108	0.043	1.009	0.202
Total	2.239	1.319	0.108	0.043	1.009	0.202
Errors in paragraphing:						
44. No indentation	0.978	0.388	0.430	0.768	1.073	1.215
Total	0.978	0.388	0.430	0.768	1.073	1.215
III. Grammatical Errors						
45. Present tense of verb used where past tense was needed	1.107	1.707	1.937	1.151	1.388	1.164
46. Past tense used where present tense was needed	0.180	0.415	0.072	0.384	0.126	0.152
47. Past tense used where past participle was needed	0.335	0.349	1.255	0.384	0.315	0.253
48. Wrong verb or wrong verb form	0.926	0.815	0.395	0.469	0.946	0.455
49. Wrong mode	0.309	0.233	0.144	0.256	0.252	0.202
50. Singular noun used where a plural noun was needed	0.849	0.253	1.435	2.260	1.767	1.316
51. Plural subject followed by a singular verb	0.721	0.698	0.251	0.469	1.956	1.265
52. Singular subject followed by a plural verb	0.437	0.582	0.395	0.128	0.315	0.759
53. Subject of a verb in the objective case	0.103	0.116	0.072	0.171	0.063	0.202
54. Singular antecedent used with a plural noun or pronoun	0.103	0.698	0.287	0.810	0.694	0.455
55. Plural antecedent used with a singular noun or pronoun	0.798	0.853	0.753	0.554	0.820	1.417
56. Wrong comparative form	0.077	0.078	0.502	0.640	0.189	0.138
57. Adjective used as an adverb	0.618	0.621	0.646	0.426	1.136	0.810
58. Adjective used as a pronoun	0.077	0.155	0.036	0.043	0.063	0.101
59. Mistakes in the use of the relative pronoun	0.823	0.233	0.430	0.597	1.009	0.911
60. Figures of less than three digits used instead of words	0.772	3.258	0.287	0.682	0.126	0.506
61. "To" used for "too"	0.051	0.310	0.108	0.640	0.315	0.101
Total	8.286	11.171	9.005	10.064	11.480	10.207
IV. Mistakes in Spelling						
62. Words misspelled	11.374	14.430	12.446	13.262	11.672	11.184
63. Words not divided on the syllable	0.257	0.078	0.323	0.640	0.757	0.304
Total	11.631	14.508	12.769	13.902	12.429	11.488
Grand Total	93.469	95.120	92.662	90.574	91.858	89.054

Summary and Conclusion

The rural group in each grade made more errors than the urban group. The total number of errors made by the rural group was 37,758, an average of 13.4 errors per pupil. The urban group made a total of 28,619 errors, an average of 9.5 errors per pupil.

The smallest number of errors in each group was in grade XII; the largest number of errors in each group was in grade VIII.

Except for the fact that the rural group consistently made more errors than the urban group, there was little difference in the errors made by the two groups.

From twelve to nineteen errors, each of which accounted for more than one per cent of the total number of errors made by each group in each grade, were responsible for approximately 70 per cent of all the errors made by each group. Errors of highest frequency were the failure to begin a sentence with a capital letter, failure to use a period at the end of declarative and imperative sentences, the unnecessary use of the capital letter, failure to use a comma where it was needed, the use of the present tense where the past tense should have been used, and errors in spelling.

No one error was typical of any grade or group, and any error was just as likely to be found in one group as another in any grade from grade III to grade XII, inclusive.

Recommendations

The results of this study clearly reveal that the errors of highest frequency, for the most part, are errors which could be eliminated if all teachers—especially language and English teachers—insisted upon neatness, accuracy, and correctness in all written work. It is recommended, therefore, that

1. Much emphasis in all grades be placed upon the correct use of capital letters and end punctuation.

2. Pupils in grade III be taught to begin a sentence with a capital letter, to spell proper nouns with capital letters, and to place the correct punctuation mark at the end of a sentence. The use of other punctuation marks be taught only when the written work of the pupil shows a need for it.

3. The teaching of punctuation be largely an individual matter based upon the specific needs of the pupil.

4. Pupils be taught to correct their own papers before handing them to the teacher.

5. Pupils be taught to use punctuation marks only when they know they are needed.

6. Pupils be given frequent exercises in correcting the papers that have been written by their classmates as well as in correcting their own papers.

7. When papers are written in class, papers that are good should be used as models and exhibited on the bulletin boards.

8. Each pupil be taught to compete with himself as well as his classmates. The pupil's best work in any month be compared with his best work of the previous month in order that he may note the progress he is making.

9. Various types of writing be taught—letter writing, expository writing, editorial writing, etc.—in all grades above the intermediate grades. The work of the intermediate and primary grades be confined to the writing of stories, relating incidents and the writing of friendly letters.

10. The work of all grades be as neat and accurate at it is possible for the pupil to make it.

11. Grammatical errors which appear in the writen work of the pupils be the basis for remedial instruction in grammar according to the needs of the individual.

12. Spelling be taught as a part of the language work rather than as a separate subject.

13. All work in spelling be written.

14. Any list of words used as a basic list for a particular grade be supplemented by the words that the pupils misspell in their written work.

15. Each pupil keep a list of his own spelling demons to be used for individual instruction.

16. Much work in spelling be based on individual needs and the methods of instruction be suited to the needs of the individual who is to receive the instruction.

THE USE OF MUSIC IN AN EDUCATIONAL PROGRAM OF MENTAL HYGIENE

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The aim of a program of mental hygiene in the schools is definitely the prevention of maladjustment of school pupils. These maladjustments may have various causes, but emotional disturbances have been found to be one of the most prevalent. Psychiatrists and psychologists have recommended many methods for overcoming unbalanced emotional conditions, but as writers of textbooks on mental hygiene, they have failed to give consideration to music as a means of overcoming emotional maladjustments.

Considerable experimentation needs to be done in the field of musical therapy, but the use of music as an aid in personality adjustment has been attested by mere observation. Dr. Van de Wall has indicated in his book, *Music in Institutions*, that music is a positive aid in overcoming many of the most serious problems and difficulties of those confined in hospitals and sanitaria for mental diseases. The author has observed also that in visiting many schools he believes he has seen an entirely different atmosphere and attitude among pupils in schools in which music is stressed, or has an important place in the daily program, compared with those schools where the music program is neglected.

It has been claimed that music brings aid and support to help in meeting and solving difficult situations, so why should it not be considered in a mental hygiene program? Beethoven made the statement: "He who can enter into the spirit of my music will be beyond the reach of the world's misery." Many know that music can help one temporarily to forget his troubles and worries.

The question may be asked: In what manner does music influence people? According to Dr. Van de Wall, musical stimuli may effect the muscular tonicity and coordination, motor activity, breath control, physical endurance and perseverence, bring heightened or lowered emotional states, change the emotions, give expressions of moods, of quiet, cheer, joy, and feeling tone, stimulate intellectual control, and the like.

Emotional maladjustment naturally influences personality, and since personality is determined to a large degree by social attitudes, music, as a socializing force, should again be considered. It may develop among other outcomes, a feeling of tolerance, closeness and sympathy with other human beings. Music abilities and inclinations have been found to be manifestations of mental, physical, and social trends, that are produced by man's functioning as a social creature. The appeal of music as a social force was realized during the World War, when our country sought its aid in uniting our nation, and stimulating the morale of both soldiers and workers.

Emotions play an important part in human behavior, thought, and action, whether they are stimulated by music or daily life situations. Psychological and medical research has shown that emotions can influence the digestion, coagulation of the blood, blood pressure, heart action, respiration, and can change the rate of glandular secretion.

Procedures in the Experiment

The author conducted an experiment in which the emotional responses to music were observed and measured by use of the galvanometer, by the reaction commonly referred to as "phycho-galvanic reflex." These experiments are based on the belief that changes in electrical resistance of the body are due to emotional reactions, which resistance is measured through changes in perspiration produced by the sweat glands. The expriemental results indicate, to some extent, how music may be utilized in a mental hygiene program.

No explanation will be given of the apparatus, the procedure, or conditions of the experiment, except to state that all were in compliance with conventional and authentic research requirements.

The sixteen subjects who took part in the experiment were blindfolded and were tested on two successive days at the same time of day. On the first day a "non-stimulus curve"

was recorded, and on the following day, the "music-stimulus curve" was taken. These two curves were then plotted on a chart for comparison.

Each subject was directed to relax completely while the non-stimulus curve was being recorded, although, naturally, it is impossible to control the thinking of a subject, which in turn my influence his emotional responses. The directions given on the following day when the music-stimulus curve was recorded, were merely to listen to the selections for enjoyment and pleasure.

The selections used were: (1) a classical selection, *Poet and Peasant Overture*, by Von Suppe, played by a symphony orchestra, and referred to in the discussion as the "classical selection"; (2) *Stars and Stripes Forever*, by Sousa, played by a military band, and referred to as the "march"; (3) *Beautiful Isle of Somewhere*, by Fearis, a male quartet rendition, refrerred to as the "sacred number"; and (4) *Valencia*, by Padilla, a syncopated orchestra number, referred to as the "jazz selection."

The subjects were asked various questions after the second day of testing had been completed. Such questions were intended to discover familiarity of selections, preferences, musical training if any, dancing ability, and the like. It was found, however, that there was no relationship between these responses and the emotional reactions as recorded by the galvanometer.

The sixteen subjects, who participated in the experiment, were all mature adults, ranging in age from 26 to 45 years. The group was rather cosmopolitan, since it included Negroes, Japanese, Chinese, Phillipinos, and American Whites. The results of only seven subjects will be presented, since they are most significant.

Responses of Seven Subjects

The responses of the subject as shown in Figure 1 are the most extreme of the group. The non-stimulus curve and music-stimulus curve are nearly opposite. All four of the selections were familiar to this subject, and although he preferred the classical selection, his responses do not indicate this. He did not dance, but showed the greatest reaction to the jazz selection.

In contrast to the reactions shown in Figure 1, the responses of a Negro subject are shown in Figure 2. The interpretation of this record would seem to be that there was no emotional reaction whatever to the music, or at least it was extremely slight. At no time was there any marked fluctuation of either curve, and although one might have expected some fluctuation in the music-

stimulus curve while the subject listened to the rhythm of the march or the jazz selection, nevertheless there was none. Another negro subject responded in the same manner, which fact might lead to the hypothesis that since the electrical resistance is measured through the perspiration produced by sweat glands, there is something in the structure of the sweat glands of Negroes to cause this situation in recording responses on the psychogalvanometer. Both subjects claimed that they enjoyed all four selections, especially the rhythmical numbers, but their responses as recorded by the galvanometer do not indicate this.

There is nothing particularly significant in the record shown in Figure 3, except that this is the response of a Japanese subject. The strongest reaction was to the jazz selection, which may have been due to the marked rhythm, since Japanese music has such rhythm.

The response shown in Figure 4 indicates rather strong reactions to the music. This subject was a Chinese student who had never heard western music until three years prior

to this experiment. He stated that he preferred the march because of the percussion instruments that he could hear. Percussion instruments are also outstanding in all Chinese music.

The subject whose responses are shown in Figure 5 had been specially trained in music. Two weeks after the music-stimulus curve had been taken, a second music-stimulus curve was recorded in order to compare the two. The similarity of the two curves is quite marked, an indication that there is considerable reliability to reactions, as far as constancy is concerned.

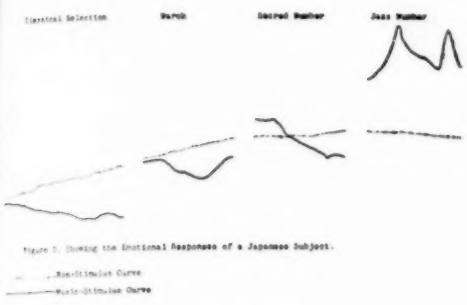

Figure 5. Showing the Emotional Responses of a Japanese Subject.

Non-Stimulus Curve
Music-Stimulus Curve

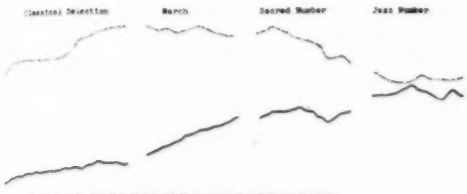

Figure 6. Showing the Emotional Responses of a Chinese Subject.

Non-Stimulus Curve
Music-Stimulus Curve

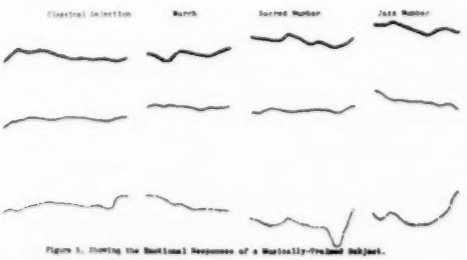

Figure 8. Showing the Emotional Responses of a Musically-Trained Subject.

Non-Stimulus Curve
Music-Stimulus Curve
Music-Stimulus Curve, taken two weeks later

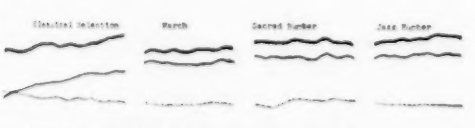

Figure 6. Showing the Emotional Responses of a Non-Musical Subject.

Non-Stimulus Curve
Music-Stimulus Curve
Music-Stimulus Curve, taken two weeks later, but in reverse order

As in Figure 5, two recordings were made of the music-stimulus curve for the subject whose responses are shown in Figure 6. This lady had had no musical training. The second music-stimulus curve was taken two weeks later, also, but in this case the order of hearing the selections was reversed. That is, the subject first heard the jazz selection, then in order, the sacred number, the march, and the classical selection. In this case, again, there is a most distinct similarity between the two music-stimulus curves, a further indication that emotional reactions to music may be constant.

The subject whose responses are shown in Figure 7, was given the usual directions for the recording of the non-stimulus curve. As stated previously, however, no definite instructions can control the thoughts of a subject. This is plainly indicated in the non-stimulus curve, which shows marked deflections and a continual rise, an indication of a constantly increased emotional state. The music-stimulus curve, on the other hand, shows no rise, although there is some deflection. After the experiment had been completed, the experimenter inquired about the thoughts of the subject while the non-stimulus curve had been taken on the previous day. The subject stated that he was extremely nervous and worried about a particular problem, and that this worry had preyed on his mind to the extent that he had lost his appetite, and it was impossible for him to sleep at night. Evidently the music stimulus soothed and relaxed the subject somewhat, and perhaps made him forget his troubles temporarily, since the music-stimulus curve

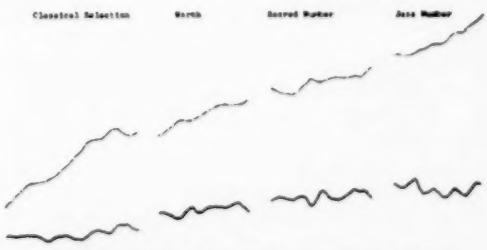

Figure 7. Showing the Emotional Responses of a Subject on the Verge of a Nervous Breakdown

Non-Stimulus Curve
Music-Stimulus Curve

does not show an increase in emotional tension, such as the non-stimulus curve. It is interesting to note also that during the short periods between selections, in each case, there was a slight rise in the emotional response.

On the day after the music stimulus curve had been recorded, this subject suffered a complete nervous breakdown, and was sent to another section of the country on a physician's recommendations. This record shows the effect of music on one person's thoughts in a better way than any other record. It indicates, also, that music can be used to quiet persons and to give at least temporary relief from care and worry.

This same subject had agreed to act as a subject, immediately following the experiment of emotional measurement, in another experiment of photographing the eye-movements while reading music. The results of this experiment indicated that his music reading ability was far below average, although he had acted as a subject five months previously, and the results then showed him to be a very superior music reader. Here again, there is an indication that emotional disturbances definitely influence mental achievements of some individuals.

In the records of all sixteen subjects it was observed that results were similar to those found by Diserens in his experimentation. The two-second latent period was observed in the recording of all subjects. Subjects trained in music showed less reaction than those untrained. Familiarity with selections seemed to have little or no effect upon the subjects' responses. Most subjects showed a distinct reaction to music with rhythm. In fact, there was less response to beauty of melody or harmony, than to rhythm. There were pronounced emotional responses to changes in the music, such as, a change from solo to the quartet, from vocal to instrumental, from loud to soft, and *vice versa*.

In order to indicate how music can be used in a program of mental hygiene, I shall refer to the chapter "The Psychology of Music and Morale," from Crane's *Applied Psychology*. Crane states that if we stimulate a child's imagination to noble deeds and high resolves at that same time that we expose his ears to a specific piece of music, and if we continue doing this on several subsequent occasions, the music will eventually cause him to think and act in an idealistic fashion even though we are no longer present to incite his imagination with words. This is related to the phenomena of association and conditioned reflex. Morale can be built through the re-arousal of former emotions, a function that music can perform as well as any stimuli. Emotions cannot be recalled at will, but they can be re-aroused through specific stimuli such as music.

Crane states further that school teachers of a nation can condition their students adversely to the military music of their country, so that the adult generation might be helpless in inciting the youth to warfare by means of military airs. Militarists and pacifists must vie for cooperation of teachers and parents if they wish to condition the future men and women of the country to be warlike or peaceful.

It is possible, therefore, through music to bring on emotional states from the most extreme relaxation to the most extreme excitation. School children, through early training, can be conditioned, through musical stimuli, to react according to desired outcomes of situations. This would require, however, that music be heard and presented in the same general situation each time during the learning period.

These desired characteristics may be introduced through music, either with a story accompanying the selection, or as a song. Such desired characteristics might include determination, pride, unselfishness, joy, sympathy, patriotism, ambition, friendship, success, sorrow, accomplishment, rejoicing, perseverence, honesty, and the like.

In advocating the use of music, in this manner, in a mental hygiene program, my claim may seem far-fetched and idealistic, but since we know definitely that music can arouse emotions, and that emotions can stimulate many desired reactions, there is some logic in this hypothesis. Mental hygiene aims to prevent maladjustment, but what means specifically prevent maladjustment makes little difference, so long as adjustment is accomplished. If music can be used as a means toward this end, and I claim it can, then let us make more adequate use of it.

THE PLACE OF HUMOR IN THE CURRICULUM[1]

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It is believed that those concerned with curriculum problems will find value in the presentation of the conclusions drawn from a recent investigation of stimuli which caused laughter in children, for the following reasons:

1. Situations which cause laughter have been studied more often among infants, adolescents, and adults than between the age range of seven and thirteen.
2. In spite of the fact that it is during this critical period of development that children are acquiring many new interests, few studies have increased our knowledge of laughter at the preadolescent level.
3. Influences outside the school are exciting a tremendous pressure upon the emotions of the children. Teacher guidance is an important factor at this stage, if one agrees that humor is important in the well rounded development of children.

Sixteen hundred pupils in grades three to six inclusive in New York City public schools provided the data used for this study by first answering a questionnaire and secondly a check list. Controlled observation by trained assistants was the third method used. One purpose of the study was to examine any possible relationship that might exist between the appreciation of humor and the age, grade, sex or intelligence of the children.

For this reason the pupils were carefully selected to represent a cross-section of the school population of New York City. The schools used provided a sampling of all types of instruction and a variety of environmental backgrounds.

Equal numbers of boys and girls were used and the distribution of intelligence scores ranged from 60 to 169 with one-half of the scores between 90 and 110. Chronological ages were between 7.1 and 13.5 in terms of years and months.

[1] Abstracted from the author's dissertation, "Stimuli Which Cause Laughter in Children", prepared at the New York University, 1939.

PROCEDURES USED

1. Trained observers, under the direct supervision of the investigator, kept anecdotal records of all instances of laughter they were able to observe in classrooms to which they were assigned.

2. Descriptions of occasions when laughter in children had been observed and recorded were compared with the replies of the subjects to questions raised informally, and with records of observations made in classrooms when lauhgter occured.

From these the questionnaire and check lists were compiled. These included directions to draw a funny picture and to explain why it was funny. The results obtained were subjected to tabular comparison which yielded the evidence from which conclusions were drawn.

FINDINGS

From these conclusions those most important to curricular development are discussed in the following sections.

Humorous Drawings.—Almost every child attempted to draw a humorous picture, although many refused to answer certain other sections of the questionnaire and checklist of which these directions were a part.

The speed with which the children drew their pictures and the laughter which accompanied their attempts were matched by their desire to show the results to others. The hilarity which greeted this display indicated an appreciation of the humor of the drawings, but made it difficult to restore the usual good order in the classroom, and goes far to explain the teachers' reluctance to allow the pupils to indulge in this form of drawing.

Most of the drawings were schematic and resembled those of comic strip artists. Ideas that could not be expressed by drawings alone followed the approved style of having balloons floating from the mouths of the characters. Radiating lines indicated motion, crosses were used for eyes, stars expressed pain, and both slumber and insect stings were represented by Z's. Electric shock was indi-

cated by a jagged line, and patches showed that wounds had been inflicted. Boys made use of these devices two hundred and fifty-four times in contrast with fifty-seven similar examples by girls.

The situations used were the stand-bys of the comic strips found in the "funnies", and showed that minor accidents were regarded as extremely funny. Boys thought that shooting and "A kick in the pants" were most amusing. Exaggerations and disproportion were used deliberately, according to the explanations of why the picture was funny. A nose was almost always very long or bulbous. Grotesque figures that bore no relation to realistic drawings were produced, and the fantastic forms often showed a high degree of originality.

Absurdities, such as misplaced or omitted features, anachronisms and distortions were made with intention, and were thought to be highly amusing. Recognition of absurdities has been found to correlate with intelligence at a high level.[2] This appeared to be true in the present study as well.

Almost any infirmity stirred the risibilities of the immature artists. Physical handicaps were mirth provoking to them. Illustrated jokes made use of the stereotyped captions, and the mishaps of the animals or persons drawn were like those of the professional jokesmith or "gag-man".

Onomatopoeic and coined expletives were as picturesque as the slang and mis-spelled phrases that clarified the ideas of the pictures. Eighty-four different onomatopes were used one hundred and thirty-four times.

It was found that the pupils were inclined to show by peculiarities of dress or by labels that the persons drawn represented particular individuals or occupations. Sixty different characters were drawn five hundred and ten times. Classmates were named and caricatured in thirty-nine cases. These modern youngsters drew a Communist, a W. P. A. worker, a striker, and a newsboy. The mayor, the judge and the policeman appeared in other drawings. Convicts and burglars were matched by soldiers and a sheriff.

Inability to portray certain situations that were deemed funny by the children was overcome by them by means of explanations written beside the pictures, and indicated than an attempt had been made to interpret the humor for the one who saw it. This was similar to the procedure used by professional cartoonists. Other resemblances to these drawings were found that caused the investigator to analyse the drawings for further evidence that the pupils were familiar with drawings of this type.

Lehman[3] sought to explain why children look at funny papers so generally. The reasons which he gave also serve as an explanation as to why children in this experiment drew certain types of pictures. There are as follows: (1) The drawings "suggested certain human characteristics in exaggerated or distorted form. The characters examplified certain commonly encountered frailities or vanities." The drunkard, the absent-minded person, the braggart and many examples of predicaments in which one is likely to be involved were drawn by many children.

(2) "Characters took many risks and defied both natural and man-made laws". In the drawings of the children, convicts escaped from jail by means of umbrellas, girls danced the Big-Apple in midair, and cats descended from the sky in parachutes. Airplanes flying under the water and automobiles that spoke were drawn and explained. One child had no difficulty in drawing an invisible man by merely showing clothes in space without face or limbs.

(3) "Lack of self-restraint is demonstrated in the use of language which is usually incorrect and indecorous. Such usage permits the character unrestrained and uninhibited action in verbal situations."

Evidence of this desire to violate linguistic conventions was shown in the drawings.

(4) The children vicariously "satisfied their thwarted and restrained desires" if their pictures are indications of these desires. Their characters thumbed noses, stuck out tongues, fought, threw stones and kicked one another. The "unimpeded activity of their characters" was further illustrated by the loss of wig, teeth, trousers, husband, and even a head, accompanied by facial expressions that denoted pleasure.

(5) Identification with adventures, criminals or their capturers enabled the pupils to get the thrill of "mastery" and of "danger with escape secure". A soldier who had forgotten his gun was in a quandary, but smiled nonchalantly. Jail escapes were portrayed,

[2] F. Goodenough. *Measurement of Intelligence by Drawings.* Yonkers-on-Hudson, N. Y.: World Book Company 1926, p. 12.

[3] H. C. Lehman and P. A. Witty. *The Compensatory Function of the Sunday Funny Paper.* Journal of Applied Psychology, June, 1927, pp. 202–211.

but the guards captured their men. Ears were plucked from one head, while the owner showed mild astonishment at his loss.

(6) "Non-conformity to conventions" was regarded as an amusing situation. The pupils brought sex into their pictures and showed that they believed amatory adventures were very ridiculous. Inappropriate bodily functions were drawn frankly and were used. Stereotyped methods of circumventing the censors were used on occasions.

Lehman[4] concluded with, "The principle of compensatory action is a familiar one to the student of psychology. When man's impulses are thwarted, he tries in one way or another to secure a satisfactory adjustment. Indeed the ability to secure indirect satisfaction is a characteristic human trait."

There seems to be little doubt that the pupils take pleasure in drawing the same kind of cartoons that they see in the newspapers and magazines with which they are familiar. Certain of these drawings were so similar to those of professionals that the likeness could be traced.

The implication for those interested in curriculum making is that "Art must express the age in which it is created. How can a child express any other age when it is the age in which he is living that he feels?"[5]

Compensatory action may not have been present when these drawings were made, but indirect satisfaction was no doubt present, as the pupils were free to draw what they desired.

[4] H. C. Lehman, *op. cit.*, p. 202.

[5] M. Peppino. The Artist and The Child. *Progressive Education*, April, May and June, 1926, p. 124.

Humorous Stories.—The pupils replied to the question "What is one of the funniest stories you have ever heard or read?" Eight hundred children in other classes were given a check list with the following directions:

I. Answer *one*
   A funny story is ____
II. I read it
   1. In my reader
   2. In my own book
   3. In a library book
   4. I heard it.
III. It is funny because
   1. It uses queer words or sounds
   2. It is impossible
   3. It surprises you
   4. Animals act like people
   5. It has funny pictures
   6. It is foolish
   7. People would not act like those in the story

The table prepared shows the results of this part of the study.

No story which appeared on the list was limited to a single grade or enjoyed by one sex only. Those stories that were most popular were read by both boys and girls and were liked by pupils in two or more grades.

The sixteen most popular choices are shown in Table I which follows:

TABLE I

TITLES OF STORIES LISTED MORE THAN SIX TIMES BY EIGHT HUNDRED PUPILS IN GRADES THREE TO SIX INCLUSIVE

	Grade 3		4		5		6		Totals		Grand
	B	G	B	G	B	G	B	G	B	G	Total
Pinnochio	1	------	7	5	10	13	8	1	26	19	45
Snow White	1	3	8	6	10	1	8	8	27	18	45
Mickey Mouse	5	6	9	6	1	5	4	3	19	20	39
Popeye	7	2	10	1	5	------	4	2	26	5	31
Donald Duck	4	9	8	3	3	1	1	------	16	13	29
Peterkin Papers					6	12	2	------	8	12	20
Lemon Sponge						1	8	11	8	12	20
Three Pigs	2	5	2	4	------	3	------	3	4	15	19
Mr. Doolittle			1	2	5	5	2	3	8	10	18
Charlie McCarthy			4	7	2	1	3	------	9	8	17
Three Sillies	3	8	1	2					6	11	17
Tom Sawyer					7	3	3	3	10	6	16
Fairy Foot	5	7	1	1					6	8	14
Ferdinand the Bull	5	5							5	5	10
Princess Who Could Not Cry	1	4	1	1			1	1	3	6	9
Alice in Wonderland				2	------	2	3	------	5	4	7

Responses to the check list showed that only five titles listed as humorous in the Winnetka List and thirteen in Reading for Fun were selected by the pupils in this experiment although four hundred and thirty-eight titles were listed.

This table presents evidence that many of the favorite humorous stories are read by pupils in all grades from three to six, inclusive. It will be noted that Snow White, Mickey Mouse, Popeye, Donald Duck and the Three Pigs have been seen as animated cartoons on the screen. Of these five, all but Snow White have also appeared as comic strips and on the radio. Charlie McCarthy is heard upon the air, and is now in motion pictures. Tom Sawyer was a recently popular movie and others from this list have been filmed.

It appeared to be important in this study to discover not only what stories were selected as humorous, but also to find out why the pupils liked them and whether they were owned by the children or were those read at school.

The largest number of pupils, or thirty-two percent, said that the books were their own. Twenty-seven per cent stated that they had read the story in library books. Twenty-two per cent gave school readers as their replies. Six per cent failed to answer this question, and the remaining thirteen per cent said that they had heard the story whose title was given. The readers used in the classrooms were then examined. Those stories which the pupils stated had been read in school were located in basal or supplementary texts in nine cases out of ten. Classroom or school libraries accounted for the tenth case. In some readers no humorous material was found, while others had several selections of this type, including poems.

Thirty-two per cent of the pupils, or the largest group, said that they owned their books. Analysis of the titles showed that in most cases these were the books that could be purchased at the ten cent stores, and were those related to the comic strips, motion pictures or radio. These books are profusely illustrated, have extremely simple text, and were liked because they were considered funny.

Referring to Table I, it may be seen that thirty per cent of all boys and twenty per cent of all girls find humor in stories whose titles do not appear upon teachers' or librarians' lists. The elements which appeared to contribute to the interest of the children were those stated by Dunn and Gates:

1. Surprise; unexpectedness; unforeseen events, happenings, conclusions and outcome.
2. Liveliness; action; movement; having "something doing."
3. Animalness
4. Conversation; talk
5. Humor: from the child's point of view

In classrooms where humorous material could be found, stories of a higher literary quality were included, but comic books were enjoyed by some pupils in every class, irrespective of intelligence or age of the pupils, environment or accessability to libraries.

It appears that these books naturally appeal to the children's interest, and are written in a vocabulary, aided by profuse illustrations, that is comprehended by dull children as well as bright ones. Baker[6] found that dull children usually choose books that have a simple vocabulary and thought units within their comprehension, even though the books are written to appeal to children much younger. The social and vocational interests of older dull children are not often reached because the topics which would be of interest are written in a vocabulary too difficult for them to master.

Grumbine[7] notes that comic-strip technique copy is used by many advertising companies and causes sales to jump. He says that children respond to this because: (1) pictures and dialogue tell the story quickly; (2) motion is in the pictures, presented as they are in panel form, and having sequence; (3) are packed with action and adventure; (4) when balloons are not too full of type and type is large enough, they are easy to read.

These statements agree with the reason given by the pupils for their choices for this form of reading material.

Over one-fourth of the pupils said they had read their stories in library books. It was impossible to distinguish between books supplied by public libraries and those found in the school, as some schools secure loans from the local library, others send classes to branch libraries, while in some cases the li-

[6] H. F. Baker. *Characteristic Differences in Bright and Dull Pupils.* Bloomington, Ill.: Public School Publishing Co., 1927. p. 61. Related Studies, p. 13.

[7] Grumbine, E. Evalyn. *Reaching Juvenile Markets.* New York: McGraw-Hill, 1938, p. 264.

brary has no connection with the school. The choices of these books showed a wide spread, and suggest the need for many books of humor, rather than for the limited number of stories to be found in textbooks.

Thirteen per cent of the pupils stated that they had heard the story whose title was listed. In another section of the check list, the pupils were afforded an opportunity to select the sources of laughter, and it was found that stories that were heard ranked next to jokes as causes for laughter in the opinion of the children.

It appeared that the same stories that were enjoyed when read by the pupils themselves were funny to them when read to them, or when told by others. Sixty-four per cent of the pupils said that they laughed when the teacher told funny stories, and fifty-eight per cent when the teacher read funny stories to them. The observations did not show that the teachers were in the habit of either reading or telling stories. In the two classrooms observed where the teachers did read stories to the pupils, according to the anecedotal records, modern funny stories, such as Ferdinand, Freginald, Millions of Cats, and All Gone were used. These classes were third-grade classes. It may be that the observers did not happen to be present when the other teachers read stories of this type.

Two cases are too small for generalizations to be made, but it was an interesting fact that in these rooms fewer choices for the comic strip type of story were made.

The children in the third grade said they had heard the stories at school, at home, or on the radio. The fourth grade did not report any stories heard. The fifth and sixth grades did not mention school, but said that friends had told them the stories, that they had heard them on the radio, at camps, in corner stores, or at clubs.

Ninety-one of the stories listed were fairy tales, fables or fantastic stories. Many of these had animals for their characters.

Seventy-six of the stories had the adventures of animals for their plots.

Realistic stories were in the minority, and doubtless these did not seem true to the pupils as many of them had their settings in foreign lands.

The stories chosen by the pupils featured absurdities, incongruities and stupidity. That they recognized these as such was shown by their response to the check list.

The reason given for enjoying the stories were in order of frequency.

1. It is foolish
2. Animals act like people.
3. It is impossible
4. People would not act like those in the story
5. It surprises you
6. It uses queer words or sounds.

Younger pupils were attracted by pictures little more than those in the sixth grade, and the differences were also slight in other grades.

Summary

Builders of curricula may find the following generalizations valuable:

1. There is evidence to show that the pupils in the grades investigated consider fantastic stories, such as fairy tales, more amusing than any other type of story.

2. Stories in which animals behave like human beings are funny to children in grades three to six, inclusive.

3. Versions of stories that have been filmed or further adventures of characters that have appeared in the motion pictures or comic strips were selected by one-fourth of all the pupils in the experiment.

4. Several of the textbooks used in the New York City schools have sections that are meant to provide humorous stories, poems, and riddles, and it was found that wherever these books were in the hands of the pupils, the titles of these stories and poems were included in the children's choices. "Lemon Sponge" and "The Three Sillies", two of the most popular stories, were located in basal readers.

5. Recognition of why the story was funny to them was shown by the pupils' responses to the check list.

The first two conclusions are in agreement with those made by Kimmins.[8] The third, fourth and fifth, in so far as known by the investigator, have not been verified by the others.

6. Uhl[9] found that humor is slightly more important in the upper grades than in the lower grades. This was not indicated in the data obtained in this experiment except in the case of poems enjoyed.

[8] Kimmins, C. W. *Springs of Laughter*. London: Methuen, 1928.

[9] Uhl, W. L. *Scientific Determination of the Content of the Elementary School Course in Reading*. Madison: University of Wisconsin, 1921.

This may be due to the increased accessibility of comic material for younger readers, as his study was made in 1921, before the flood of cheap comic books appeared.

The Teacher and Classroom Laughter

The teacher was a most important stimulus for laughter in the classroom as shown by the anecdotal records of the observers in forty-five classrooms. Her remarks were the most potent in causing laughter and the data indicated that anecdotes were much less frequent than unkind remarks. Exasperated teachers not only relieved their tension by making wounding remarks but resorted to "calling names" and ridicule.

Records show that the children laughed at the embarrassment of their classmates when teachers mimicked their speech and posture. All signs of nervousness were laughed at by other pupils who appeared to enjoy the misfortunes of others more than their mistakes.

Contrary to common belief, pupils in general, above the fourth grade were not likely to laugh openly at the mistakes of others. This may have been due to training in courtesy, sympathy for the child, fear of reprimands by the teacher, or other factors.

Errors in spelling and arithmetic accounted for many of the cases of laughter in the earlier grades.

English lessons provided the largest number of laughs in all grades. The records show that free conversation, dramatization and lessons of an informal nature occurred during the time given over to oral composition and that the pupils responded happily to the loosening of restraint. This fact should be considered by those engaged in planning curricular activities.

Comparison of Check List Replies of Teachers and Children.—The same check list which was given to the pupils was answered by one hundred teachers. Their responses were compared with those of the pupils and the following conclusions were drawn from the data obtained:

The evidence provided by the teachers showed that with few exceptions, they did not enjoy the same radio or motion picture comedians that the children did. Some stated that the names were not familiar to them and wrote in the names of others. The slap-stick type of humor liked by the pupils was frowned upon by the teachers.

It was found that one-third of the teachers do not read the comic strips. The choices of those who answered agree with those of the pupils, when the replies are ranked, in two of the eleven sections, but show decided differences in the remainder. Their choices were not similiar to those of the pupils.

Also the teachers who answered the check-list did not find pictures, queer words or the improbability that persons would act like the characters in the story as amusing as the children did. They ranked surprise first, in contrast with the pupils who placed it fourth on the list. The adults wrote in other reasons for their selections, such as "knew the person involved", "coincidental" and "true to life."

The request to draw a funny picture was almost ignored. In contrast with the efforts of the children, eighty of the one hundred teachers omitted this portion of the check-list.

Each section of the check list was analysed in this way. The only correlations between the responses of the children and the teachers that were found were that both groups found clowns and funny hats ludicrous, and that neither group could recall many names of funny poems.

Summary.—The findings of this part of the investigation are considered important. Evidence was found to show that teachers do not enjoy the same humorous situations that are appreciated by the pupils.

Certain[10] says that children have a taste for fantasy, daring and beauty wherever they find them, and often appreciate such forms of literature more keenly than their teachers. This statement might be broadened to include the words humorous situations, particularly since he was referring to the Tarzan books, which are one form of the comic strip type.

Eastman speaks of the "handicap of being grown up",[11] for adults have forgotten how to play. Those teachers who retained the playful spirit of childhood, and who had an aptitude for seeing the funny side of life, used laughter as a solvent for many difficult situations. Friction was dissipated by light remarks made to the class, who responded to the "mental tickle" with gayety.

[10] Cf. C. C. Certain. "More About Children's Preferences." *Elementary English Review*, Vol. IV. 1927, p. 77.

[11] M. Eastman. *Enjoyment of Laughter*. New York: Blue Ribbon Books, 1939, p. 10.

1. There was more laughter in classrooms in which the atmosphere was free from restraint. Habits of unobtrusiveness and compliance with authority were most in evidence in the rooms in which the least laughter was observed.

2. The remarks of teachers were more likely to produce laughter than were their actions, although any departure from conventional modes of behavior expected of teachers were met with laughter. The effect of these remarks upon the children appeared to depend upon recognition of what was expected of them. If laughter was considered a desirable response, the pupils obliged; otherwise control was exercised.

3. Subjective factors and insufficient data prevent the drawing of conclusions in regard to the effect of the teacher in conditioning the laughter of children at different age or grade levels.

Conclusions

It has been necessary to omit much of the thesis from which the writer has drawn the general conclusions, but in general, the implications for those responsible for curriculum development are that since children are interested in a brand of humor that is distasteful to their teachers unless a sympathetic interest in this type of humor is shown by the adults who organize instruction and course of study materials, pupils may doubt their competency to guide them in their choice of humorous reading material, the selection of motion-picture comedies, radio programs, or other forms of entertainment.

PREDICTION OF HIGH SCHOOL MARKS IN ELEMENTARY ALGEBRA[1]

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For the purpose of constructing a formula with which to predict the success of students in high school elementary algebra at Tipton, Oklahoma, data were assembled from the eighth and ninth grade records of 214 students who were in the ninth grade during one of the years from 1931–32 through 1935–36. From the eighth grade record, the data include "equated scores" from the New Stanford Achievement Test; from the ninth grade record, chronological age, mental age, IQ, and marks for the year in elementary algebra. A five point marking system was used, and numerical values were assigned as follows: A, 5; B, 4; C, 3; D, 2; E, 1. In addition, the same information was obtained for a group of 57 students who studied algebra the next year after the close of the five-year period (1936–37). This was used to check the efficiency of a regression equation and a table of "chances of success."

CONSTRUCTION OF PREDICTION DEVICES

The first step was the calculation of zero-order coefficients of correlation. These are all shown in Table I. Those marked with a star (*) were found to be non-linear, by the formula

$$\eta^2 - r^2 < \frac{4.047}{\sqrt{N}} \sqrt{(\eta^2 - r^2)\left[(1-\eta^2)^2 - (1-r^2)^2 + 1\right]}$$

Next came the determination of the variables to be used. Variables 2, 3, 5, and 7 had to be eliminated because of non-linear relationships. Dictation, number 8, could have been included but would have added too little to the efficiency of the regression equation. $R_{1.469}$ is .5731 and $R_{1.4689}$ is only .5742. Therefore, Dictation would add only .08 of one per cent to the efficiency (Em) of the prediction. Other combinations than 1, 4, 6, and 9 could have been used, but any forecast from them would have been less accurate. Table II lists the various combinations and indicates the results to be expected from each.

The method used in calculating the regression equation was suggested by Dr. J. D. Heilman in his study, "The Relative Influence Upon Educational Achievement of Some Hereditary and Environmental Factors."[2] It is the method of path coefficients described by Sewell Wright.[3]

[1] Based on Field Study No. 2, Colorado State College of Education, Greeley, Colorado, 1940.

[2] Heilman, J. D. "The Relative Influence Upon Educational Achievement of Some Hereditary and Environmental Factors." Nature and Nurture, Part II, National Society for the Study of Education, Public School Publishing Company, Bloomington, Illinois, 1928.

[3] Wright, Sewell. "Correlation and Causation." *Journal of Agricultural Research*, 20: No. 7, January 3, 1921, pp. 557–585.

TABLE I

ZERO-ORDER COEFFICIENTS OF CORRELATION[1]

Subject	1	2	3	4	5	6	7	8	9
1. Algebra		—.37	.21	.41	*.45	.51	.32	.31	.48
2. Chronological Age	.04		*.13	—.40	—.29	—.41	*—.33	*—.14	*—.69
3. Mental Age	.04	.05		*.29	.08	.23	.14	*.15	.56
4. Reading	.04	.04	.04		.41	.52	.60	.63	.57
5. Arithmetic Computation	.04	.04	.05	.04		.64	.33	.40	.30
6. Arithmetic Reasoning	.03	.04	.04	.03	.03		*.41	.39	.51
7. Language Usage	.04	.04	.05	.03	.04	.04		*.58	.42
8. Dictation	.04	.05	.05	.03	.04	.04	.03		.37
9. IQ	.04	.02	.03	.03	.04	.03	.04	.04	
Mean	2.64	167.54	175.36	91.39	102.09	93.87	96.39	92.16	105.43
Standard Deviation	1.11	15.28	12.67	10.55	12.22	12.39	11.43	9.83	10.96

N = 214.
* Non-linear.
[1] Upper right figures are product-moment coefficients of correlation, and the lower left figures are their P.E.'s.

TABLE II

MULTIPLE CORRELATION COEFFICIENTS

$R_{1.x}$	Coefficient	Probable Error	P.E. of Est.	Forecasting Efficiency Em	Eg
1.4689	.57	.03	.61	18.13%	42.11%
1.469	.57	.03	.62	18.05	42.05
1.369	.57	.03	.62	17.80	41.88
1.69	.57	.03	.62	17.70	41.81
1.26	.54	.03	.63	15.71	40.40
1.46	.54	.03	.63	15.69	40.38
1.68	.52	.03	.64	14.77	39.73
1.36	.52	.03	.64	14.47	39.52

Primary Data (Table I):

(1) Algebra
$M =$ 2.6448
$SD =$ 1.1129
$r_{14} =$ .4113
$r_{16} =$ .5090
$r_{19} =$ .4770

(4) Reading
$M =$ 91.3925
$SD =$ 10.5505
$r_{46} =$ .5163
$r_{49} =$ .5659

(6) Arith. Reasoning
$M =$ 93.8692
$SD =$ 12.3903
$r_{69} =$ .5118

(9) IQ
$M =$ 105.4346
$SD =$ 10.9590

I. To find $R_{1.469}$:

$$R^2_{1.469} = ar_{14} + br_{16} + cr_{19}$$
$$r_{14} = a + br_{46} + cr_{49}$$
$$r_{16} = ar_{46} + b + cr_{69}$$
$$r_{19} = ar_{49} + br_{69} + c$$

Substituting

$$.41 = a + .52b + 57c$$
$$.51 = .52a + b + .51c$$
$$.48 = .57a + .51b + c$$

From these equations

$$a = .10$$
$$b = .34$$
$$c = .25$$
$$R^2_{1.469} = ar_{14} + br_{16} + cr_{19}$$

Substituting

$$R^2_{1.469} = (.10)(.41) + (.34)(.51) + (.25)(.48)$$
$$= .33$$
$$R_{1.469} = .57$$

II. To find the regression coefficients for the equation:

$$x_1 = b_{14.69}x_4 + b_{14.49}x_6 + b_{19.46}x_9$$
$$x_1 = P_{1.4}\frac{\sigma_1}{\sigma_4}x_4 + P_{1.6}\frac{\sigma_1}{\sigma_6}x_6 + P\frac{\sigma_1}{\sigma_9}{}^6x$$

Substituting

$$x_1 = .10\frac{1.11}{10.55}x_4 + .34\frac{1.11}{12.39}x_6 + .25\frac{1.11}{10.96}x_9$$
$$x_1 = .01x_4 + .03x_6 + .03x_9$$

In score form

$$x_1 = b_{14.69}x_4 + b_{16.49}x_6 + b_{19.46}x_9 + K$$
$$X_1 - 2.64 = .01(X_4 - 91.39) + .03(X_6 - 93.87) + .03(X_9 - 105.43)$$
$$X_1 = .01X_4 + .03X_6 + .03X_9 - 4.25$$

III. To find the standard error of estimate:

$$\sigma_{(est)} = \sigma_1\sqrt{1 - R^2_{1.469}}$$
$$= 1.11\sqrt{1 - .32}$$
$$= 1.11 \times .82$$
$$= .91$$

IV. To find the coefficient of joint determination:

$$d_{x.A} = P^2_{x.A}$$
$$d_{x.\overline{AB}} = 2P_{x.A}P_{x.B}r_{AB}$$
$$d_{1.4} = a^2 = (.10)^2 = .0100$$
$$d_{1.6} = b^2 = (.34)^2 = .1156$$
$$d_{1.9} = c^2 = (.25)^2 = .0625$$
$$\Sigma d_{1.A} = .1881$$
$$d_{1.\overline{46}} = 2(.10)(.34)(.52) = .0354$$
$$d_{1.\overline{49}} = 2(.10)(.25)(.57) = .0286$$
$$d_{1.\overline{69}} = 2(.25)(.34)(.57) = .0970$$
$$\Sigma d_{1.\overline{AB}} = .1610$$
$$\Sigma d_{1.A} = .1881$$
$$\Sigma d_{1.\overline{AB}} = .1610$$

.3491 (Coefficient of joint determination)[1]

[1] See page 13 for explanation.

V. To calculate the chances a student would have to make the various marks at certain predicted mark values.

If the middle of a mark C were exactly 3.00, the lowest A (4.50) would be 1.64 times the standard error of estimate above 3.00. Beyond this point one would find .05 of the normal probability curve. Therefore, the chances are 5 out of 100 that the prediction for a C grade student would be in error enough to give him an A. The chances that this student would make other marks were similarly calculated, and also the chances that other students at selected points would have for making the various marks. The results are listed in Table III.

TABLE III

CHANCES IN ONE HUNDRED THAT STUDENTS WOULD MAKE THE VARIOUS MARKS

Estimated Mark		E	D	C	B	A
1.00	E	71	24	5	0	0
1.50	D	50	36	12	2	0
2.00	D	29	42	24	5	0
2.50	C	14	36	36	12	2
3.00	C	5	24	42	24	5
3.50	B	2	12	36	36	14
4.00	B	0	5	24	42	29
4.50	A	0	2	12	36	50
5.00	A	0	0	5	24	71

APPLICATION AND INTERPRETATION

Marks in elementary algebra for the group of 57 who finished algebra in 1937 were predicted from the regression equation. A comparison of the predicted and obtained marks brought out several interesting facts that make the predictions seem valuable.

The mean value of the predictions for the 40 for whom C was predicted is 2.68. In view of the fact that the standard error of estimate is .91, one would expect them to be distributed among five categories in the proportions given in Table IV. The table also gives the percentages actually obtained. It should be noted that 82.50 per cent of the obtained marks were within one letter mark of the prediction (C). Now, if the standard error of estimate had been 1.00, which is the width of the categories, instead of .91, one would have estimated that 84.66 per cent would be within one letter mark of the prediction. The difference between the predicted and the obtained would then have been only 2.16 per cent.

Table III seems to be practically reliable. By this table one would have expected 5 out of 100 of those for whom C was predicted to make A. As a matter of fact 2 of the 40 did receive A's. That is exactly the ratio of the table. About 9 of the 40 would be expected to make B's; actually 8 made B's. In neither case was the expectation exceeded. When the predicted values of the ten who made above C are examined, it is still more clear that students are extremely unlikely to go beyond the expectancy calculated. The two predicted C's that made A's had a mean value of 3.27; the eight who made B's had a predicted mean value of 3.23. It seems very unlikely, therefore, that any student whose mark value was predicted as 3.00 could have more than 29 chances out of 100 to make above average. This should be an important factor in student guidance.

TABLE IV

DISTRIBUTION OF MARKS EXPECTED FOR 40 STUDENTS WHO WOULD HAVE OBTAINED C IF THE PREDICTION FORMULA HAD BEEN 100 PER CENT PERFECT

Mark	Per Cent Estimated	Per Cent Obtained
A	2.28	5.00
B	16.13	20.00
C	39.52	32.50
D	32.39	30.00
E	9.68	12.50
B + C + D	88.04	82.50

According to Table III, any student, to have a fifty-fifty chance to make above the average (C), should have an expectancy of 3.50. Courses of study that require a high degree of ability in mathematics would likely be inappropriate for students under 3.50. Students who are rated under 4.00 are handicapped enough that great care should be taken to select teachers or schools that would give the student his maximum opportunity to succeed. Any student would have more chance to succeed than indicated by the table if he were put in classes smaller than the average, or if he were put under a teacher who was better than the average, or if other favorable changes in himself or his environment occurred.

Sometimes students and parents wonder what the student's chances of success would be in certain professions which require quantitative insight. Suppose that it had been found that one needs to be in the upper quartile range if he is to have greater probability of success than failure. The question now becomes, what are this individual's chances for being in the upper quartile range? The norms published for the Cooperative Ele-

mentary Algebra Test, Form 1936, place Q_3 at about raw score 40. Of the 57 students who took the Cooperative test in 1937, not one whose predicted mark value was less than 2.90 made more than 40 on the test. Table III shows that the student whose prediction is 3.00 has only 29 chances out of 100 to make above C. The student having the predicted value 3.50 would have only a fifty-fifty chance of obtaining more than a C. That would not quite give him an even chance to be in the upper twenty-five per cent, but perhaps chance enough for practical purposes. At any rate, Table III and the results obtained in the test are remarkably close.

Only two students made 60 or above on the Cooperative test, and both of these were forecast for more than 3.00; one for 3.42 and the other, 3.23. The one forecast for 3.42 made a raw score of 68 on the test, and the other one, forecast 3.23, made 60 on the tests, but the teacher gave the higher one a C and the lower one a B. Both should have had A, according to the test results. Since the reliability of the test is .92 and that of teachers' marks much less, one might hesitate to select those in the highest twenty-five per cent in ability, from teachers' marks.

Even though the regression equation was based upon correlations between teachers' marks and test scores, the correlation obtained between the Cooperative test scores and the predicted values would lead one to believe that a student's fitness for mathematical pursuits could best be determined by standard tests. It would be enlightening for someone to work out a prediction formula based entirely on highly reliable standard tests. This study gives hope that such a formula would be more efficient than the one produced from the Tipton data.

The foregoing paragraphs have stressed a fair degree of efficiency of the predictions based upon Reading, Arithmetic Reasoning, and IQ. The efficiency is much higher for group prediction, however, than for estimating what any particular individual will do. It may be said that if the prediction is as high as 3.50 the student has a fifty-fifty chance of making above C. He will have also, two chances out of 100 to make a failure; and 14 chances out of 100 to make an A. What determines the actual outcome? It is surely not determined entirely by whatever factors are measured by the New Stanford tests in Reading and Arithmetic Reasoning, and by the Otis test of intelligence. The coefficient of joint determination, which was calculated on page 7, is .3491. This means that the known measured factors influencing success in algebra are only 35 per cent of the total combination of causes that bring success in algebra. Until such time as all of the factors are known and accurately measured, there will be no possibility of making perfect predictions. If one knew the student, his teachers, and his present social and economic environment perfectly, it would still be necessary to have foreknowledge of future events to be able to predict perfectly. Hence there is no need to discard a prediction formula because it does not contain all the requisite elements for perfect prophesy. The United States Department of Agriculture can predict the cotton crop from just a few of the factors which enter into the production of cotton, with a degree of accuracy sufficient for practical purposes. The prophecy formula developed for use at Tipton contains a greater percentage of causal factors than the formula sometimes used to forecast cotton production. To use the formula for algebra prognosis will give results 18 per cent better than the best guess, and 42 per cent better than a mere guess, with groups similar to those involved in this study.

Conclusions

1. A prediction formula based upon scores from the New Stanford Test and Otis IQ's is valuable for guidance when its results are considered one of several factors involved in success.

2. What a class will do in algebra may be predicted with considerable accuracy. This should be of value to the teacher as a check upon her efficiency.

3. Any prediction for an individual is less accurate than for a class, but it is valuable. For a student to know his approximate chances for success or failure should be of assistance in determining educational and vocational courses. Besides, if one knows that he has fifty chances to succeed and the same number to fail, he is certainly forewarned against neglecting opportunities to learn.

4. It seems quite probable that better prediction formulas can be constructed when students' marks become more valid, when better tests are available, and when more of the factors requisite for success can be measured.

CHANGING CONCEPTIONS OF MAJOR TOPICS IN GENERAL SCIENCE TEXTBOOKS[1]
(1911-1934)

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PROBLEM

A knowledge of the relative values of various major topics found in general science textbooks should be of interest not only to the general science teacher, but also to the textbook writer. This investigation represents an attempt to determine the change from 1911 through 1934 in the relative values of various subject-matter elements.

[1] A portion of this study including the problem and part of the technique appeared in the *Journal of Educational Research*, XXXI (November, 1937), pp. 199–204.

TECHNIQUE OF STUDY

Some more or less arbitrary criteria of selection had to be set up to reduce the number of contributing sources of data sufficiently to make the investigation practicable.

The selection, therefore, was based primarily upon the availability and wide use of the eighteen general science textbooks listed.

For ease of interpretation, the twenty-four years included in this analysis have been divided into four periods as indicated. Gen-

PERIOD 1911-16

Textbook	Author	Publisher	Copyright Date
1. First Year Science	Snyder	Allyn and Bacon	1914
2. General Science	Clark	American Book Company	1912
3. General Science	Elhuff	D. C. Heath and Company	1916
4. Introduction to General Science	Rowell	The Macmillan Company	1911

PERIOD 1917-23

1. General Science	Bedford	Allyn and Bacon	1921
2. Civic Science in Home and Community	Hunter and Whitman	American Book Company	1923
3. The Science of Common Things	Tower and Lunt	D. C. Heath and Company	1922
4. An Introduction to the Study of Science	Smith and Jewett	The Macmillan Company	1918

PERIOD 1924-28

1. General Science	Snyder	Allyn and Bacon	1925
2. New Introduction to Science	Clark	American Book Company	1928
3. General Science	Elhuff	D. C. Heath and Company	1925
4. Science of Home and Community	Trafton	The Macmillan Company	1926

PERIOD 1929-34

1. Our Environment: Its Relation to Us (Book I)	Carpenter and Wood	Allyn and Bacon	1933
Our Environment: How we Adapt Ourselves to It (Book II)	Carpenter and Wood	Allyn and Bacon	1934
Our Environment: How We Use and Control It (Book III)	Wood and Carpenter	Allyn and Bacon	1934
2. Problems in General Science	Hunter and Whitman	American Book Company	1934
3. The World About Us	Pulvermacher and Vosburgh	D. C. Heath and Company	1930
4. General Science For Today	Watkins and Bedell	The Macmillan Company	1932

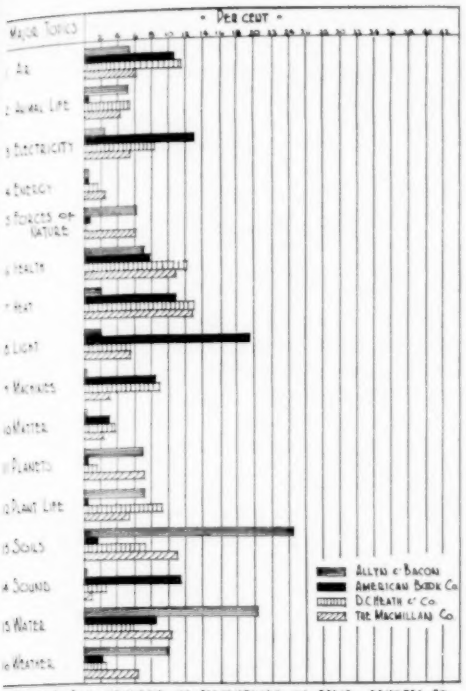

FIGURE 1. A COMPARISON OF PERCENTAGES OF SPACE DEVOTED TO SIXTEEN MAJOR TOPICS IN FOUR GENERAL SCIENCE TEXTBOOKS PUBLISHED 1911-1916.

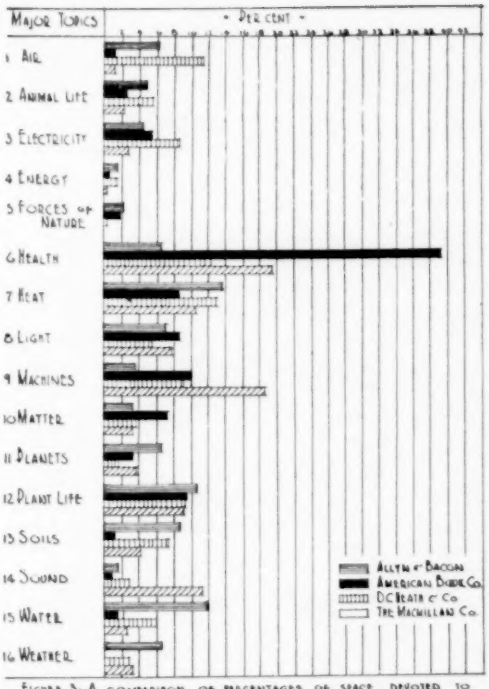

FIGURE 3. A COMPARISON OF PERCENTAGES OF SPACE DEVOTED TO SIXTEEN MAJOR TOPICS IN FOUR GENERAL SCIENCE TEXTBOOKS PUBLISHED 1924-1928.

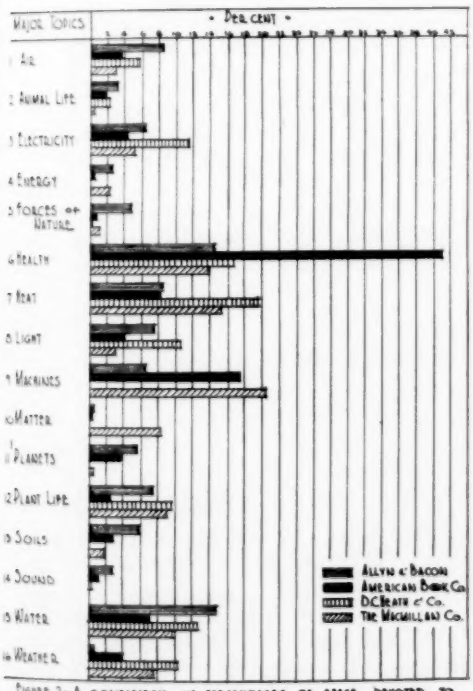

FIGURE 2. A COMPARISON OF PERCENTAGES OF SPACE DEVOTED TO SIXTEEN MAJOR TOPICS IN FOUR GENERAL SCIENCE TEXTBOOKS PUBLISHED 1917-1923.

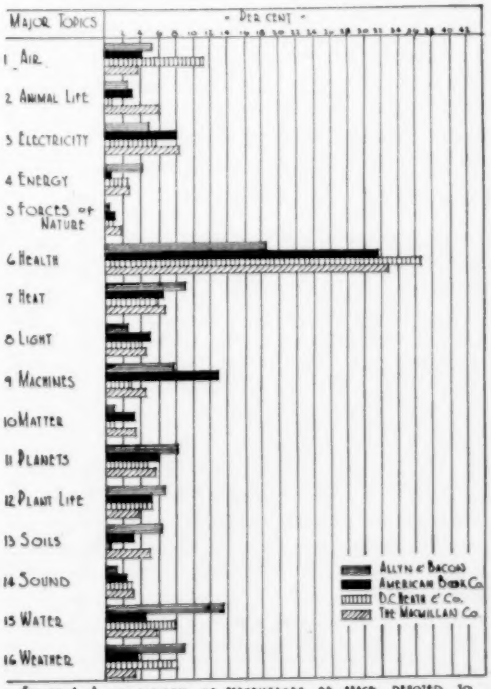

FIGURE 4. A COMPARISON OF PERCENTAGES OF SPACE DEVOTED TO SIXTEEN MAJOR TOPICS IN FOUR GENERAL SCIENCE TEXTBOOKS PUBLISHED 1929-1934.

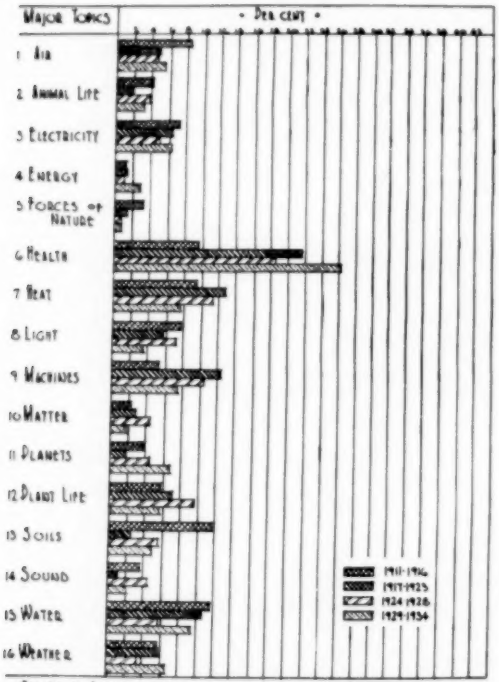

FIGURE 5: A COMPARISON OF PERCENTAGES OF SPACE DEVOTED TO SIXTEEN MAJOR TOPICS IN FOUR GENERAL SCIENCE TEXTBOOKS PUBLISHED OVER FOUR PERIODS: 1911-1916, 1917-1923, 1924-1928, 1929-1934.

eral science textbooks of four publishers were used for each period. It is interesting to note that in the last period (1929–34) one publisher brought out a three-book series which, for convenience, will be regarded as a unit. In this article reference will be made to the sixteen general science textbooks listed, that is, four for each period.

From the table of contents of each textbook examined, it appears that in nearly every case there are sixteen major topics, namely: air, animal life, electricity, energy, forces of nature, health, heat, light, machine, matter, planets, plant life, soils, sound, water, and weather. These data were tabulated in four tables[2] for the purpose of showing page percentages of space based on the total books used within a period. From these findings graphs were constructed comparing percentages of space devoted to each topic for each period for the different book companies. A fifth figure has been included indicating a page percentage comparison for the four periods.

[2] Simmons, Maitland P. "Changing Conceptions of Major Topics in General Science Textbooks" (1911–1934), *Journal of Educational Research*, XXXI (November, 1937), pp. 202–203.

The topics, as listed here in the figures, correspond closely to many of those selected by Curtis, Downing, Heinman, Trafton, Webb, and Weckel in their analyses of subject-matter content in general science textbooks. One reason, perhaps, for similarity of findings is that some of the same texts were used in both investigations.

It is evident that textbooks form a source of data for studies such as this one. It is also true that inferences from data in sources of this character may be highly colored by the interpretation of the investigator. No two investigators analyzing the same materials would have distributed them under exactly the same headings.

Summary and Conclusion

An investigation of sixteen general science textbooks covering a period of years from 1911–34 shows that sixteen major topics are dominant. From the analysis of these topics the following facts are revealed:

a. There is a consensus of opinion as to which major topics should be treated in a general science textbook.

b. There has been an increase in the unanimity of opinion in recent years relative to the emphasis of major topics.

c. The major topics usually found in general science textbooks are as follows:

1. Air
2. Animal Life
3. Electricity
4. Energy
5. Forces of Nature
6. Health
7. Heat
8. Light
9. Machines
10. Matter
11. Planets
12. Plant Life
13. Soils
14. Sound
15. Water
16. Weather

d. The analysis of textbook content, summarized briefly in Figures 1, 2, 3, 4, and 5, shows the following facts regarding the major topics considered:

1. Air—There is a more unified agreement in the last period (1929–34) regarding an allotment of word space. This topic ranks

about in the middle of the sixteen major topics insomuch as emphasis is concerned.

2. Animal Life—Close agreement in the amount of page space is shown for all periods except that of 1917–23. The rank as to word space is rather low. This may indicate a belief on the part of the writer that the topic is rather simple to understand and doesn't require as much attention as some others.

3. Electricity—There is rather close agreement as to the amount of space required for this topic, but there is a gradual decrease in the percentage of space from 1911–34.

4. Energy—The subject ranks low with a range from 0 to 4.1 percent. Since "Energy" is closely allied to "Machines," it is probably included in the treatment of "Machines." That the topic can be classed among those which require a small amount of space is quite evident.

5. Forces of Nature—The investigation shows a decreasing emphasis upon this topic. However, for the periods 1924–28 and 1929–34, the percentage of space devoted to "Forces of Nature" has remained constant. The probable reason for the decrease in the number of pages given to the topic may be due to the fact that "Forces of Nature" may have been combined with "Machines." One possible explanation for this combination is their natural relationship.

6. Health—This topic was given the maximum amount of space in the last three periods; in the first period it ranked third. The amount of space given to the topic varies from 9.5 to 26.1 percent. This is an increase of more than 250 percent during a twenty-four year period. Probably it is a reflection of the growing recognition of the value of health education in the control and prevention of disease.

7. Heat—During the first three periods, "Heat" ranked high among the major topics. From 1929–34 it received less emphasis. This is difficult to explain for "Heat" is one of the essentials of life. Moreover, the appearance of such new heating devices as the oil burner would seem to demand an expansion of this topic.

8. Light—For the most part, wide variations occur. However, for the last two periods there is some general agreement as to the emphasis given this topic.

9. Machines—Lack of agreement occurs for the four periods. The second period shows a range from 0 to 20.4 percent, but there appears to be a gradual decline in percentage of emphasis from 1917 to 1934. The probable explanation is that "Machines" are so common now that less stress is required than formerly was the case.

10. Matter—Agreement exists as to the small percentage of word space.

11. Planets—Variations occur, but there is a rise in percentage of space for the 1929–34 period. Textbook content shows that more attention has been given to the study of stars and planets through the use of new and improved telescopes during recent years.

12. Plant life—Disagreement occurs for all periods with percentages ranging from .3 percent in the first period to 10.4 percent in the third period. It is difficult to account for the decrease in the 1929–34 period, due to the importance of agriculture at all times.

13. Soils—There is a gradual decrease in page content devoted to this topic. However, the Allyn and Bacon textbook, largely physical geography, devotes nearly one-fourth of its content to "Soils," while the 1917–23 D. C. Heath books scarcely mentions the subject. With respect to the small amount of attention given to the topic, it would be difficult to justify it. Since we do live in a machine age, we are, nevertheless, quite dependent upon agriculture for subsistance.

14. Sound—A wide variation in the percentage of space exists relative to this topic. The range is from 0 to 11.3 percent. The topic received least emphasis in the second period and greatest emphasis in the third period.

15. Water—Much attention is given to water in the first, third, and fourth periods. It is to be expected that this subject would rank high, since to a large extent, man's existence depends on water.

16. Weather—A fairly constant emphasis is found in all periods, the greatest in the last period. This may be partially explained by the increasing necessity for accurate knowledge of weather conditions in the fields of aviation and navigation.

General Recommendations

Since the results of the investigation show that the major topics in general science textbooks vary as to the amount of word space, it is recommended that these data should not

be permitted to exert too strong an influence upon curriculum organization. This statement is made for two reasons: (1) The fact that topics receive major stress is no indication that they are especially well suited to particular types of pupils or to certain localities. (2) The elements of subject matter that have been taught are not necessarily what teachers should continue to teach in the future. Such an idea offers little hope for curricular progress.

Further study should be made to determine what a student needs to learn most of all in a general science course. General science textbooks should be rewritten on the basis of the findings of such thorough studies.

A STUDY OF THE RELATION BETWEEN ACHIEVEMENT IN REQUIRED COURSES AND SUBSEQUENT ACADEMIC RECORD IN THE COLLEGE OF ENGINEERING, CORNELL UNIVERSITY

GRACE E. OSTRANDER

College life is a very complex and variable phenomenon; in the strict sense, it is as broad and imponderable as life in general, hence success or failure in college is difficult to define and to predict with a high degree of reliability, according to Wood.[1] He indicates that success in college depends upon several important factors, namely, a minimum of native intelligence, a minimum of preparation, character and moral habits, the direct influence of health, interest, adjustment to academic load, and adequate management of worry and distractions.[2] It is to be expected, then, that not all of the students who begin a college course will complete it.

This is true in the College of Engineering at Cornell University where this study was made. Out of eleven hundred and four students[3] who entered the College as freshmen in the years 1929, 1930, 1931 and 1932, a total of 687 graduated in their respective senior years: 1933, 1934, 1935, and 1936. In other words, 62.2 per cent of these freshmen survived to graduate. The others voluntarily left college, were dropped by faculty action, or transferred to other colleges.[4] Any facts which may throw light on the question of which students will survive and graduate are important. The limitations of data in any restricted investigation must be considered.

Some students of mental and educational measurement believe that the the best single measure of academic achievement is previous academic achievement. Slightly less valid for predicting academic achievement are scholastic-aptitude tests, commonly called intelligence tests.

This study undertakes to determine the success or failure of students in selected courses and to follow through to senior year a large group of engineering students to get some light on these questions.

(1) *To What Extent Can We Predict success or failure in selected courses in the highest 20 per cent and in the lowest 20 per cent of the students as measured by scholastic-aptitude tests?*

In Mathematics 5a for 1929–32, for example, there were 18.1 non-passing final grades for each 100 final grades in the lowest 20 per cent of the students as measured by scholastic-aptitude tests and 6.0 non-passing final grades for each 100 final grades in the highest 20 per cent. Data for the other courses were similar to those given for Mathematics 5a.

The courses in which exceptions to the example given occurred were Mechanics Laboratory 220a and Mechanics 331. In the former course, there were no non-passing final grades for each 100 final grades in the lowest 20 per cent of the students as measured by scholastic-aptitude tests and 2.2 non-passing final grades for each 100 final grades in the highest 20 per cent. In the latter course, there were 9.6 non-passing final grades for each 100 final grades in the lowest 20 per cent of the students and 10.1 non-passing grades in the highest 20 per cent.

To what extent, on the basis of scholastic aptitude tests, can we predict graduation or non-graduation? is a question for which data are here available. Appreciable numbers of low-scoring students succeed and go on to get their degrees, which suggests the limitations of the measures of scholastic aptitude which have been employed as predictors of passing grades and of graduation. Of the 751 students who passed Mathematics 5a on the first attempt during 1929–32, 562 graduated. Of these students, 142 were in the highest 20 per cent of all students who took the scholastic-aptitude test and 79 were in the

[1] Wood, Ben D., *Measurement in Higher Education*, p. 107. World Book Company, Yonkers, N. Y., 1923.

[2] Ibid., pp. 134–38.

[3] These 1104 students were those who took the scholastic-aptitude test and represent 93.6 per cent of all freshmen entering the College in the college years of 1929, 1930, 1931 and 1932.

[4] Of the 1104 students, 114 or 10.3 per cent transferred to other colleges.

lowest 20 per cent. The percentage of those graduated for these groups were 25.2 and 14.0, respectively. Of the 129 students who passed Mathematics 5a on the second attempt during 1929–32, 69 graduated. About 14 per cent of these students were in both the highest and lowest 20 per cent of the students who took the scholastic-aptitude test.

(2) *To what Extent Does success or failure in the required and basic courses (chiefly mathematics) predict success or failure in later engineering courses?*

The students who passed Mathematics 5a on the first attempt received grades of A or B in Mechanics 330a in 23 per cent of the cases; failing grades in Mechanics 330a were received in 7.6 per cent of the cases. The students who passed Mathematics 5a on the second attempt received grades of A or B in Mechanics 330a in 7.2 per cent of the cases and failing grades in 20 per cent of the cases.

There were 103 students who passed Mathematics 5a on the first attempt and received A and B grades in Mechanics 330a; there were 159 students who received D grades in Mechanics 330a. Of the 103 students who received A and B grades, 34.9 per cent were in the highest 20 per cent and 11.7 per cent were in the lowest 20 per cent of the distribution of scholastic-aptitude test scores. Of the 159 students who received D grades, 18.2 per cent were in the highest 20 per cent and 20.8 per cent were in the lowest 20 per cent of the distribution of scholastic-aptitude test scores. Figures for the students who passed Mathematics 5a and subsequently received grades of A and B and of D in Mechanics 330a are comparable to the figures for Mathematics 5b as a prerequisite. The scholastic-aptitude test served to differentiate the high- and low-scoring students better for the students who received high grades than it did for the students who received low grades.

To what extent on the basis of passing mathematics courses, can we predict graduation or non-graduation? is a question for which data are here available. The number of students who were graduated, were dropped from college, withdrew, or left college, are given for the groups of students who passed, failed, or did not take selected subsequent courses. The ratio of students dropped to students graduated is approximately one to three for the students who passed Mathematics 5a on the first attempt and subsequently took Mathematics 5b. For the same group of students, the ratio of students dropped to students graduated for the students who took Mechanics 330a, a sophomore course, is approximately one to four. The ratio of students dropped to students graduated for the students who took Mechanics Laboratory 365 and 368, junior courses, is approximately one to fifteen. It may be noted that the ratio increased slightly from the freshman course to the sophomore course, but that the increase in the ratios was appreciable from the sophomore-year course to the junior-year courses. As the students progressed from year to year, the ratio of number of students dropped to number of students graduated increased markedly from the sophomore to the junior year.

The ratio of students dropped from college to students graduated for the students who took Mechanics 330a and had passed Mathematics 5a on the second attempt was about one to one. The ratio of students dropped from college to students graduated was one to four for the students who passed Mathematics 5a on the first attempt. Eighty-two per cent of the students who passed Mathematics 5a on the first attempt graduated, while 59 per cent of those who passed Mathematics 5a on the second attempt graduated.

The ratio of students dropped from college to students graduated for the students who took Mechanics 330a and who had passed Mathematics 5a on the third attempt was approximately one to one. There was hope of graduation for the students who passed the prerequisite mathematics courses on the third attempt and reached the subsequent mechanics course. Of the thirteen students who took Mechanics 330a, 7 students graduated and 6 dropped out of college. The small number of students in this group, however, should be taken into consideration.

The students in the groups described have been studied to discover how many were in the highest 20 per cent and in the lowest 20 per cent of the distribution of scholastic-aptitude test scores. In the group of students who passed Mathematics 5a on the first attempt, and who subsequently took Mechanics 330a, 24.2 per cent of those graduated were in the high group and 9.7 per cent were in

the low group; 18.8 per cent of the students dropped from college were in the high group and a like percentage in the low group. A much higher percentage of students were in the high group for those who were graduated.

The achievement of the engineering students who passed on to later courses from courses in the freshman and sophomore years has been discussed in detail. This section is important particularly for its value in the prediction of success and of failure of engineering students in courses for which other courses are prerequisite. It has been noted, also, that prediction of college success for students who passed the prerequisite courses, chiefly in mathematics, could not be made with too great certainty. The students who passed the prerequisite course on the first attempt had a better chance of graduating than had the students who passed the prerequisite course on the second and third attempt. Since appreciable numbers of students graduated who passed the prerequisite course on attempts over the first, students who repeated a course had a fair chance of graduating. For example, of the twenty-one students who passed Mathematics 5a on the third attempt, twelve students were graduated and nine students were dropped from the College.

In general, the engineering students who were in the highest 20 per cent as measured by scholastic-aptitude tests had a better chance of succeeding in their courses on the first attempt and of graduating than had the students who were in the lowest 20 per cent.

THE MEASUREMENT OF SOCIAL PROFICIENCY

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CHAPTER I

THE PROBLEM AND ITS IMPORTANCE

One of the most impressive facts of today is that one is living in a period of great discovery and rapid social change. Social adaptation and adjustment lag behind material changes and modifications of social norms, leaving many people, if not the majority, bewildered as to what is right and desirable in the social situations in which they find themselves. Children and adolescents would like to do the socially desirable and proficient thing, not only in the techniques of their behavior but in the guiding principles that underlie these techniques. Teachers should be cognizant of what is right in the field of social behavior, not only that they might be better equipped to meet their contacts of school and community, but to pass on by example and suggestion desirable attributes of social proficiency. It is also a commonplace that the teacher should be interested in the total development of the child, being a leader and a guide in aiding the pupils to bridge the gap socially as well as intellectually between their own immaturity and the assumption of adult responsibility which society imposes upon its mature members.

The importance of this problem becomes all the more manifest when one observes persons of mediocre intelligence succeeding in positions where others possessing a much superior intelligence have failed. Of course, the answer is that there are other factors besides intelligence that are required for success in any field. One knows that interest is a factor, and yet one has seen those who have interest as well as intelligence, and who can do the particular task well, and who have, at the same time, failed because they could not get along with their associates.

There has probably been no field where this has been any more true than in the teaching profession. One has frequently known of teachers who have succeeded with a minimum of capabilities, and who were respected and admired for professional ability, when in reality it was a case of social proficiency overshadowing a less impressive intelligence.

One does not need to confine himself to the teaching profession in order to note this important fact. In an important study of personality Brandenburg indicates the importance of social effectiveness as follows:

> He had a group of engineers write out lists of the personality traits which make for success in the profession of engineering. He then asked twenty-nine engineering students at Purdue University to rate each other on the basis of each of twenty-three personality traits thought to be important in determining success. Five and a half years later these same subjects were followed up to find out how successful they had been as measured by annual earnings. The results showed quite clearly that personality as rated by one's fellows had a far greater bearing on financial success than did intelligence as measured by a standardized test or quality of school work in engineering subjects.

The correlations between income and the three traits are given in Table 4.

TABLE 4. CORRELATIONS BETWEEN INCOME AND THREE TRAITS IN A GROUP OF PURDUE ENGINEERS

Trait	Correlation
Personality	.72
Intelligence	.18
College grades	.32

Although intelligence does not correlate highly with earning ability, it does show a high association with creative ability. Every member of the group who published some scientific research, or who invented something during the period of the investigation, fell in the upper third of the whole group on the basis of intelligence.

Note: The author wishes to express his appreciation for the assistance rendered by A. S. Barr, Professor of Education, University of Wisconsin, under whose direction this study was done.

[1] Floyd L. Ruch, *Psychology and Life*, pp. 79–81. Chicago: Scott, Foresman & Company, 1937. Pp. xiv + 678.

This fact is very significant in that it shows that our society does not always reward creative ability as highly as it does the more commonplace ability to apply the discoveries of others to an immediate problem.

The best third on the basis of intelligence earned slightly less than the middle third but more than the poorest third of the engineers, as we see in Table 5.

TABLE 5. EARNINGS OF PURDUE GRADUATE ENGINEERS BY INTELLIGENCE-TEST GROUPS

	Income after 5½ years
Best third in intelligence test	$2400
Middle third in intelligence test	2580
Poorest third in intelligence test	2100

The results of the Brandenburg study are striking largely because we are inclined to think of engineering as something cold and intellectual. We are not at all reluctant to ascribe to personality a large role in determining success in other lines of work which involve personal relations, such as politics, teaching, salesmanship, medicine or the ministry.

To the average man there is no problem here. He believes that if he uses his own common sense, and perhaps his conscience, that this will be enough to solve his problems whenever he thinks it is worth the effort to go to that much trouble. Even the writers of treatises on human behavior have until recently (and many even today) used a purely philosophical approach. In his perennial search for truth man has appealed to custom and tradition, authority, personal experience, and syllogistic reasoning, and only recently to scientific inquiry.[2]

One of the great weaknesses in the social organization and consequent norms of human behavior has been the failure to substitute for guessing exact measurements and exact comparisons, or at the most, inadequate appeals to unreliable sources. The writer feels that he must necessarily turn to measurement in his attempt to procure a clearer understanding of social proficiency, to obtain norms for that which actually constitutes social proficiency, and finally to derive a means of determining and interpreting degrees of social proficiency. The author's point of view has been expressed ably, although perhaps more graphically than necessary, in the following quotation:[3]

> The history of science is still written chiefly in terms of man's struggle to know and master the world of nature about him. It is a story more dramatic and more significant in the history of the race than the story of sieges and lost battles and diplomatic victories. But significant as the achievement of man may be in the conquest of force and matter, of air and land and water, its telling may, in the years to come, give way before a new epic, the story of man's study and growing knowledge of himself as an individual and in the mass. Of this new story, only a few chapters have as yet been written, in comparison with what may still be before us to know and to write.
>
> For such a study new norms and new techniques must be derived and applied. They are already being set up and, as in all sound scientific progress, they are built upon the disciplines and the knowledge that the world of scholarship has laid at the basis of past progress. And as in the past, all fields of exact knowledge or bold scientific theory were based on measurement, that is, upon mathematics, so in the study of himself and his kind, man seeks the aid of mathematics and develops bio-chemistry as the handmaid of his newer studies of himself and of all animate things.

One's social proficiency is the degree of one's effectiveness with other people, or the way in which one handles his relationships with others. Like other phases of personality it becomes formulated as a result of group interactions. Just as in other phases of personality there might be certain unlearned qualities which are essential to effective social behavior, nevertheless, the directional momentum in the rise and development of social proficiency as well as personality in general grows out of the social milieu.

The matter of role and status is important here.[4] The individual tends to play the so-

[2] Carter V. Good, A. S. Barr, and Douglas E. Scates. *The Methodology of Educational Research*, Chapter 1, pp. 1–30. New York: D. Appleton–Century Company, 1936. Pp. xxi + 882.

[3] J. A. Harris, C. M. Jackson, D. G. Paterson, and R. E. Seammon, *The Measurement of Man*, p. v. Minneapolis: The University of Minnesota Press, 1930. Pp. vii + 215.

[4] See any introductory sociology text, for example, Kimball Young: An Introductory Sociology (N. Y., American Book Co., 1934, revised 1939); C. A. Dawson and W. E. Gettys: An Introduction to Sociology (N. Y., Ronald Press Co., 1929, revised 1935); or R. L. Sutherland and J. L. Woodward: Introductory Sociology (Chicago, J. B. Lippincott Co., 1937).

cially expected role in every group of which he is a member. By role is meant the part that the individual plays. Just as an actor plays the role that is called for in the stage production, so the individual plays the role that is expected of him in his social group. How well an individual plays a role determines his status. This characteristic of status and role functions early in life. A little child is not in the world very long before he finds that certain habits bring him success and certain others failure. As he develops those habits that bring success, the child is merely playing the socially expected role. This is just as true of the dependent personality as of the one who shows a degree of self-reliance. The importance of the socially expected role is evident when we see people who are called brave assuming the role and attempting to live up to it, or the individual who acts cowardly when people assume that he is a coward. Then, there is the boy who is called "Sissy." There was doubtless some reason for his being called "Sissy" to begin with, but the nickname enhances the probability that the child will continue to play such a role.

On the other hand, the role that the individual plays determines his status or prestige, in fact, his degree of social proficiency.

As the individual grows older, he may desire to raise his status; but if he does so desire, he considers the type of role that would gain favor with his group. He may, in fact, reach the point where he plays a different role for each of the social groups of which he is a member. Actually, most individuals do this very thing. Their behavior in church is different from their behavior at the Elks Club, and their behavior at home is different from either of the others, and so on.

Back of the techniques of behavior, growing out of role and status, certain guiding rules or principles are derived. With many people, perhaps, these principles are not very fixed or rigid; in others they may be deep-seated and enmeshed in fixed habits of thought and action. Some people may be perfectly aware of their principles, such as the individual who makes it a point "when in Rome do as the Romans do." Others may go about their daily work without its ever occurring to them that they are acting upon principles that have become part and parcel of them. Then, of course, we are familiar with those people who always hope to do the correct thing, but who blunder bewilderingly. Some of the latter, too, have the best of principles, such as consideration for others, honesty and so forth, but give vivid evidence that good intentions are insufficient. In brief, it would seem that any test of social proficiency should consider both techniques and principles.

It is the writer's purpose to devise and validate such a test of social proficiency.

CHAPTER II

REVIEW OF PREVIOUS INVESTIGATIONS

SECTION 1

THE EXPERIMENTAL LITERATURE

In 1920, Thorndike[1] inspired a number of subsequent investigations when he suggested that intelligence was properly divided into three areas: abstract, mechanical, and social. He defines social intelligence as follows: "By social intelligence is meant the ability to understand and manage men and women, boys and girls—to act wisely in human relations." Discussion on social intelligence has somewhat centered on the role of inheritance and of learning in its development. The use of the term "intelligence" suggests that the ability to understand and manage people is a native trait. Subsequent investigations, for the most part, treat social intelligence as a learned reaction; hence, the term "social proficiency" is used in this study rather than "social intelligence."

Several investigations have brought to light the importance of physical attractiveness in one's social proficiency. Perrin[2] (1921) studied physical attractiveness and repulsiveness. He made a rating chart by analyzing the responses of members of the experimenting group who named twenty-five girls and twenty-five boys noted for physical attractiveness. He then had a mixed group of advanced students list ten fellow students for whom they had the greatest affection. Next, he studied physically atractive girls and boys —four groups altogether. He considered attractiveness to be an important consideration

[1] Edward L. Thorndike, "Intelligence and its Uses," *Harper's Magazine*, CXL (1920), 227–35.

[2] F. A. C. Perrin, "Physical Attractiveness and Repulsiveness," *Journal of Experimental Psychology*, IV (1921), 203–17.

in being liked and in getting on well with other people. He found that attractive people have more practical knowledge as to how to deal with people because they have had more experience.

General intelligence has been found in several investigations to be a factor in friendships, and hence, in social proficiency. Almack[3] (1922) in his study of three hundred and eighty-seven children in grades four to seven inclusive from the public schools of San Jose, California, found that in general, one selects associates from one's own mental level. He distinguished between types of associates in the selection, in that "there is more intelligence used in the selection of work associates than play associates."

The part played by temperament in harmonious human relationships was examined by Ream[4] (1922). His subjects were seventy-five men students at Carnegie Institute of Technology, ranging in age from twenty-five to thirty-five years old. They were given the Carnegie series of group will-temperament tests. Six names were selected from the class, three of whom were of the deliberate type and three of the mobile type. The mobile type was found to be more popular than the deliberate type.

Williams[5] (1923) made a study of adolescent friendships. His subjects were eighty-four boys, ages twelve to seventeen, from the Boys' School, Cleveland, which was a school for delinquent boys. He found that these boys gave the following reasons for liking those named as chums: they are full of fun, fair and square, friendly, have done things for me, are good sports, athletes, stick with one, live near, are quiet, good boys, help in trouble, and several miscellaneous reasons not enumerated in the article. By far the most important reason was being "full of fun," with being "fair and square" as an uncontested second; the others were given in a descending frequency in the order listed. The friends chosen were about the same chronological age and about the same mental age, with a tendency to choose those of a greater mental age. They asserted that they would stick to a friend through thick and thin, no matter what he did. They would almost never tell on him if he got into trouble; and if he showed himself to be a coward, they would either stick by him to help him win out, or would drop him because they hate cowardice. On this latter point (cowardice) the boys were about evenly divided as to their attitude.

Freyd[6] (1924) attempted to compare the personalities of the socially and the mechanically inclined. For typical examples, he chose to compare salesmen and students of engineering. He differs from Thorndike in saying, ". . . conceptual intelligence is not of a distinct sort, but displays itself in both mechanical intelligence and social intelligence." He is of the opinion that social and mechanical intelligence are distinguished behavioristically. The socially intelligent men were more excitable, self-confident, open-hearted, quick to make friends, present-minded, good-natured adaptable, talkative, neat in dress, credulous or suggestible, objective or universal in their verbal associations, careless of details, deficient in fine motor coordination, and persevering. On the reverse side they were less self-conscious and less conceited. The author appears to regard extroversion as synonymous with social intelligence. He has assumed rather than shown that his socially intelligent type actually gets along well with people. As will be demonstrated later, sociability and social proficiency do not necessarily go hand in hand.

People who are well-liked tend to be overrated by their friends. Shen[7] (1925) had twenty-six people, who had been classmates for at least three years, rank one another with respect to friendship, and also in regard to eight different traits: intellectual quickness, intellectual profoundness, memory, impulsiveness, adaptability, persistence, leadership, and scholarship. He found that there was a definite tendency to over-estimate according to the degree of friendship, and that this was not a conscious discrimination but was a result of a genuine illusion. Hence the socially proficient person may appear to be more superior than he actually is.

[3] John C. Almack, "Influence of Intelligence on the Selection of Associates," *School and Society*, XVI (November 4, 1922), 529–30.

[4] M. J. Ream, "Temperament in Harmonious Human Relationships," *Journal of Abnormal Psychology & Social Psychology*, XVII (1922/23), 58–61.

[5] Paul Williams, "A Study of Adolescent Friendships," *Pedagogical Seminary*, XXX (1923), 342–46.

[6] Max Freyd, "The Personalities of the Socially and the Mechanically Inclined; a Study of the Differences in Personality between Men whose Primary Interest is Social and Men whose Primary Interest is in Machines," *Psychological Monographs*, XXXIII, no. 4, whole no. 151 (1924), vi + 101.

[7] Eugene Shen, "The Influence of Friendship upon Personal Ratings," *Journal of Applied Psychology*, IX (1925), 66–68.

Miss Wellman[8] (1926) studied the school child's choice of companions. She observed one hundred and thirteen children in grades seven to nine inclusive in the Lincoln School of Columbia University for five months. The child's closest companion was judged to be the one he was with the greatest number of times. Twenty-seven pairs of girls and twenty-nine of boys were thus obtained and compared in regard to chronological age, mental age, I. Q., scholarship, extroversion, height, and physical achievement. With the girl pairs, the greatest point of similarity was scholarship, while with the boys, similarity was found in regard to heights, I. Q., and chronological age. The least point of similarity with the girls was height; with boys, it was extroversion, scholarship, and mental age.

Miss Dexter[9] (1926) attempted to find out what made a course, a teacher, or a student popular. The human angle throws light upon the matter of social proficiency. Her data were secured by means of unsigned questionnaires given to two hundred students, all beyond the freshman year. The traits that made for the popular teacher were: fairness (a conspicuous first choice), sense of humor (a good second), and then in graduated order such traits as tolerance, scholarliness, reasonableness, clearness, friendliness, interesting lecturer, interest in student, health or "pep," wit, sympathy, personality, manner, appearance, voice, patience, poise, absence of sarcasm, and good sportsmanship. Traits that made for the popular student were: friendliness, good disposition, vivacity or "pep," wit or humor, pleasing personality, style or manner of dress, executive ability, sympathy, democratic spirit, ability as a student, versatility, attractive face, school spirit, sincerity, generosity, and athletic ability.

Gilliland and Miss Burke[10] (1026) devised a measurement of sociability. They used the term "sociability" to cover the same meaning as does "social proficiency," although at present they are considered distinctly different. In the measurement of sociability, they used four tests, three of which were made with photographs, and one a questionnaire of a quantitative nature. This test however, has not been found to be particularly useful.

In this same year, 1926, was launched the George Washington Social Intelligence test, or 'Moss Test' as it is sometimes called. This test and the various investigations pertaining to it, will be considered in *section 2* of this study.

Furfey[11] (1927) disclosed some factors influencing the selection of boys' chums. His subjects were sixty-two pairs of chums from an experimental group under the Department of Sociology of the Catholic University of America. He found that association, whether in the home neighborhood or at school, is an essential condition to such friendships. Chums were selected on the basis of similarity in age, size, intelligence, and maturity. However, low correlations suggest that "the more important factors are certain non-intellectual traits as yet unmeasured."

Yepsen[12-13] (1923) worked out a "personal behavior card" for use in social diagnosis and adjustments. It covers such points as attitude of others toward the individual, sociability, reliability in general, truthfulness, attitudes toward others, language and language attitude, property attitude, attitude toward superiors, activities, industriousness, work (non-industrial), initiative, property, and discipline. This behavior card is used at the Training School at Vineland, New Jersey, for backward or mentally deficient children. While it is designed for use with subnormal persons, the author asserts that it differentiates well between extremes of adjustment success, and would have value on throwing light on the social proficiency of those in the lower mental brackets.

Lowrey[14] (1928) tried to discover what traits make an individual liked. He collected his data from forty-four social workers who prepared lists of traits. The most important traits in making one liked are cheerfulness, physical appearance, honesty, intelligence, and tolerance. Traits not liked are self-consciousness, selfishness, egotism, irritableness, stubbornness, jealousy, timidity, snobbishness. Traits either desirable or undesirable are pride, aggressiveness, suggestibility, sensitiveness, and self-confidence.

[8] Beth Wellman, "The School Child's Choice of Companions," *Journal of Educational Research*, XIV (1926), 126–32.

[9] Emily S. Dexter, "What Constitutes Campus Popularity in Course or Individual," *School and Society*, XXIII (1926), 758–60.

[10] A. R. Gilliland and Ruth S. Burke, "A Measurement of Sociability," *Journal of Applied Psychology*, X (1926), 315–26.

[11] Paul Hanly Furfey, "Some Factors Influencing the Selection of Boys' Chums," *Journal of Applied Psychology*, XI (1927), 47–51.

[12] Lloyd N. Yepsen, "Measuring Social Adaptation," *Journal of Juvenile Research*, XII (1928), 254–60.

[13] Lloyd N. Yepsen, "Objective Estimation of Social Behavior," *Training School Bulletin*, XXV (May, 1928), 33–41.

[14] Lawson G. Lowrey, "People We Like," *The Survey*, LXI (1928), 248–9.

The Administration Staff of the Bureau of Public Personnel[15] (1930) devised a social intelligence test which has not proved to be of any great value. It might well be called a "business social intelligence test," for its purpose was largely for personnel use. Social intelligence was defined as the ability to adjust oneself to new situations, involving relations with other people, and to adopt a course of action which is effective in the sense that it leads others to do consistently and voluntarily the thing that it is desired they should do. The test is of the questionnaire type.

Miss Strang[16] (1930) who has given considerable attention to the George Washington Social Intelligence Test, examined the available measures of social intelligence. Measurements have been devised that measure knowledge such as the paper and pencil tests, and tests that measure the functional aspect of social intelligence, such as real situations used as tests, rating scales, questionnaires, and photographs. She stresses the necessity for improving the available tests as to reliability and validity, and is opposed to devising new measures without taking sufficient time to test their reliability and validity.

Miss Jenkins[17] (1931) investigated the factors involved in children's friendships. Her study included two hundred and eighty boys and girls representing a cross section of the junior high schools of Riverside, California. Of primary importance is the socio-economic status of the parents of the child and of the friend. The children tended to choose friends within one year of their age, either younger or older, and of the same approximate intelligence. Friendships were made almost equally in school and in outside contacts such as church, etc. There is a slight tendency for children to have a greater number of like interests with their best friends than with other children, but it is not known whether this is a cause or a result of the friendship.

Syrkin[18] (1931) in giving intelligence tests to Soviet children concluded from his experience that separate scales should be established for each homogeneous social group. This strongly suggests that, in order to measure social proficiency accurately, separate tests would have to be made and administered to different social groups. What is socially acceptable in one stratum may not at all be pleasing in another.

Witty[19] (1931) made a study in regard to sociability in children. Five thousand children in the fifth and sixth grades of the Kansas City schools were given the Lehman Play Quiz. He then arranged six experimental groups. He found that extremely social and versatile groups are not superior physically, and that the so-called non-social children are not inferior to moderately or extremely social children in the adjustment which they effect to life's situations. This is another link in showing that sociability and socal proficency are different things.

Miss Strang[20] (1931) devised a test of knowledge of social usage which was given to one thousand and fourteen junior and senior high school students. Her authorities were standard etiquette books. She found that there is a significant difference, when occupational groups are compared, in favor of children from professional groups and also that there is no consistent relationship between the number of clubs in which membership is claimed and the knowledge of social usage.

Fleming[21] (1932) made a study in regard to "best friends." His subjects were two hundred students mostly sophomores, taking a compulsory course in elementary psychology. His correlations "indicate in general that there is a greater tendency for birds of a feather to flock together than for opposites to attract." Introverts seek introverts as friends, while extroverts choose extroverts, as a fairly definite tendency. There is no apparent relation, however, between best friends on the basis of emotional steadiness, expressiveness, intelligence (as measured by the Army Alpha or the Thorndike examination), nor upon the basis of socio-economic status as measured by the Sims scale. There were some sex differences. For instance, there

[15] Bureau of Public Personnel Administration Staff. "Partially Standardized Test of Social Intelligence," *Public Personnel Studies*, VIII (1930), 73–9.

[16] Ruth Strang, "Measures of Social Intelligence," *American Journal of Sociology*, XXXVI (1930), 263–9.

[17] Gladys Gardner Jenkins, "Factors Involved in Children's Friendships," *Journal of Educational Psychology*, XXII (1931), 440–48.

[18] M. Syrkin, "Analysis of the Content of a Test from the Point of View of Social Classes," *Psikhotekhi Psikhofiziol Truda*, IV (1931), 321–36.

[19] Paul A. Witty, *A Study of Deviates in Versatility and Sociability of Play Interest*, New York: Teachers College, Columbia University, 1931. Pp. ix + 57.

[20] Ruth Strang, "Knowledge of Social Usage in Junior and Senior High Schools," *School and Society*, XXXIV (1931), 709–12.

[21] Edwin G. Flemming, "Best Friends," *Journal of Social Psychology*, III (1932), 385–90.

were more reciprocal friendships among women than among men. Men tend to choose friends with more pleasing personalities than their own, who are better adjusted, and who have more social intelligence than themselves, whereas women do not. Fleming concludes that it is especially true that birds of a feather flock together in respect to ". . . pleasingness of personality, adjustment, and social intelligence."

Witty[22] (1932) devoted further attention to sociability in children. His findings are considerably different from the popular opinion of the non-social child and were based on the five thousand children mentioned in his 1931 publication. His final study dealt with a social group of one hundred children who had participated most often with other children in play; with a non-social group of one hundred children who had participated least in play with other children; and with a control group of one hundred children who had engaged in an average number of games with other children. The children were rated by three teachers on nine traits. It was found that the social group ranked first only in one thing, personal attractiveness, while the non-social group ranked first on seven items. "Conspicuous differences favored the non-social group in nearly all judgments." On mental and educational tests, also, the non-social group excelled above the control and social groups. A weakness of this study is that the judging was done by adults, whereas one's social proficiency is really determined by one's associates.

Dierks[23] (1932) in an experimental investigation on social behavior, used the "two-subject method" in testing character. It was based on the assumption that qualities of character can be judged only by observing the behavior of two or more subjects towards each other. This matter of social interaction is an item to remember in devising social intelligence tests. Results on paper might be quite different from results in an actual situation.

In 1933, Miss Strang,[24] in collaboration with Brown and Stratton, issued in published form the Test of the Knowledge of Social Usage. They reported a reliability of .87 based on forty-six cases retested after a month. As mentioned previously, they did not find that knowledge of social usage went hand in hand with memberships in clubs, but that it seemed to be an irrelevant factor among junior and senior high school students.

Miss Seagoe[25] (1933) examined the factors that influenced the selection of associates. She first made a preliminary study, and then the data for the study proper was gathered from one hundred and fifteen pairs of friends chosen from eight hundred and twenty-three children in grades three to eight inclusive of the Garvey district in Los Angeles County, California. Of these children, 55.2 per cent of whom were girls and 44.8 per cent boys, she says, "Propinquity as a force limiting friendship is given emphasis" and "Similarity is more important than dissimilarity in the selection of associates." Physical maturity and mental level tend to be similar; personal characteristics are also similar. Thus likeness is an important factor in social attraction. This matter of conformity to the group is mentioned in other works.

Partridge[26] (1933) made a study of friendships among adolescent boys. The boys ranged in age from twelve to seventeen years old. The one hundred and forty-two were members of a summer camp where the author studied them for a period ranging from two weeks to more than a month. He observed their friendships, both groupings and shiftings. In addition he gave them the Army Alpha intelligence test. He found that there was a distinct tendency for those boys to select friends of their own chronological and mental ages.

Stauter and Hunting[27] (1933) devised an "acquaintanceship questionnaire" to be used as a test of sociability. On the questionnaire were listed one hundred and ninety-one social groups, occupations, races, religious and fraternal organizations, etc., with instructions to indicate the number of one's acquaintances within the group in question. It was administered to six hundred and twenty-one subjects in classes ranging in size from eight

[22] Paul A. Witty, "Measurement of Sociability," *Religious Education*, XXVII (1932), 255–60.

[23] H. Dierks, "Experimentelle Untersuchungen des Sozialen Verhaltens," *Zeitschrift für Angewandte Psychologie*, XLIII (1932), 193–270.

[24] Ruth Strang, M. A. Brown, and D. C. Stratton, *Test of Knowledge of Social Usage*. New York: Teachers College, Columbia University, 1933.

[25] May V. Seagoe, "Factors Influencing the Selection of Associates," *Journal of Educational Research*, XXVII (September, 1933), 32–40.

[26] E. DeAlton Partridge, "A Study of Friendships Among Adolescent Boys," *Pedagogical Seminary and Journal of Genetic Psychology*, XLIII (December, 1933), 472–7.

[27] Justin J. Stauter, and Leonard M. Hunting, "An Acquaintanceship Questionnaire as a Test of Sociability," *Journal of Social Psychology*, IV (1933), 377–80.

to one hundred and twenty-five, comprising students of all years in psychology, education, and sociology.

Koch[28] (1933) made an investigation of popularity in pre-school children. He defined popularity as "social effectiveness," whereas sociability is a trait "in the composition of which the individual's own interest in and desire to be with people looms large." Thus popularity is defined in terms of group attitudes, and sociability in terms of the individual's attitudes. His subjects, seventeen four-year old nursery school children, expressed their preferences for members of their group. Positive correlations are shown between this measure of popularity and compliance with routine, respect for property rights, a tendency to ask for commendation, and a tendency to tattle. Negative correlations are a tendency to attack, to escape, to offer no resistance when attacked, to dawdle, to refuse and ignore, and to play alone. He brings out this point, that the sociable child is not necessarily the popular one. Thus the frequently stressed point in "success" articles that "liking people" is the *sine qua non* of social proficiency becomes a debatable issue.

Laird[29] (1933) in quoting the findings of the Colgate Psychological Laboratory in 1929, says that certain traits are of definite importance in determining the emotional attitude of other people toward us. These traits are divided into three groups, and each group is weighted. The most important group has a weight of three; the traits included in this group have their roots in deflating or inflating one's ego or in making one afraid. Laird expresses the traits as follows:

Be depended upon to do what you say you will.
Go out of your way to help others.
Do not show off your knowledge.
Do not let yourself feel superior to your associates and be careful lest they get the impression you do.
Do not reprimand people who do things that displeases you.
Do not exaggerate in your statements.
Do not make fun of others behind their backs.
Do not be sarcastic.
Do not be domineering.

[28] H. L. Koch, "Popularity in Pre-School Children: Some Related Factors and a Technique of its Measurement," *Child Development*, IV (1933), 164–75.

[29] Donald A. Laird, *Why We Don't Like People*. New York, A. L. Glaser & Co., Inc., 1933. Pp. xviii + 200.

Laird's second group has a weight of two; the traits included here have their roots in the ego and fear, as do the first group:

Keep your clothing neat and tidy.
Do not be bold and nervy.
Do not laugh at the mistakes of others.
Do not take a vulgar attitude toward the opposite sex.
Do not be inclined to find fault with everybody else.
Do not correct the mistakes of others.
Do not tell jokes at the expense of those listening.
Do not try to have your own way.
Do not lose your temper.
Do not take the initiative in an argument.
Smile pleasantly.
Do not talk continuously.
Do not pry into other people's business.

The third group of traits has a weight of one; these traits have their roots in annoyances:

Do not keep your end of the conversation up by asking questions.
Do not ask favors of others.
Do not be out of patience with modern ideas.
Do not be flattering.
Do not talk about your personal troubles.
Do not spread gossip.
Do not be dignified.
Be cheerful.
Be enthusiastic.
Do not mispronounce words.
Do not be suspicious that people are trying to put something over on you.
Do not be lazy.
Do not borrow things.
Do not tell people what their moral duty is.
Do not correct the mistakes of others.
Do not tell people what is right and wrong.
Do not try to get people to believe as you do.
Do not be a political radical.
Do not talk rapidly.
Do not laugh loudly.
Refrain from asking people what they have just said.

In his discussion, Laird expresses the substance of social proficiency in a series of aphorisms, such a "we like people who buoy up our self-esteem," "it is much easier for the

ordinary man to make himself liked than the rich, the accomplished, etc." "we like people who like us, and by not arguing with us they enhance our self-regard still further," "possessions, like authority, are dangerous to display," and "keeping up with the Jones may be all right, but don't try to get ahead of them." Furthermore, we like those who do not try to reform us, because it undermines our self-ideal; therefore we like the nonreformer better. We dislike people who tell us something unpleasant. We like feeling important; consequently we like people who make us feel so by such as deference from clerks, remembering our names, and the like. We like people who make us happy, the cheerful people, but we do not like jokers. We like natural people, rather than self-conscious ones or "show-offs." We like people who do not parade their greater learning and education. We do not like being laughed at and tend to fear that quality in a person who does it in others. We also, for the same reason, dislike people who gossip.

Miss Bowley[30] (1934) observed a nursery school group during free play periods. She derived a scale of sociability. However, her study was given in abbreviated form and thus detailed data about it is lacking.

Newcomb[31] (1934) made behavior observations in a summer camp group as a measure of individual acceptance by the group. There were eighty-eight boys in three groups from ten to fifteen years old. He observed them for eighteen ten-minute periods. He states that "The individual's group status can be measured more reliably and predicted more significantly by observing treatment received from others, than by observing his own behavior, considered as a summation of traits."

Miss Zillig[32] (1934) in Germany, investigated the reasons for popularity and unpopularity in grammar school girls. She found that factors that determined the degree of popularity were social standing., occupational level of parents, and personal care, rather than intelligence and application to school duties. Social stratification might be a less potent influence in more democratic America.

Popa[33] (1934) in Rumania, devoted some attention to social intelligence. He is of the belief that the main operations of intelligence as a function of adaptation to social environment are: ability to resolve new problems, ability to memorize and learn, ability to perceive and observe, imagination, judgment, collaboration of certain special abilities, and general sociability. Socal adaptation may be active or passive, that is, one adapts oneself to the social environment as it is, or one adapts the social environment to himself.

Cattell[34] (1934) made a study of friends and enemies. His subjects were sixty-two students in a rather isolated residential college in England. Each student received an assessment of his traits by a committee of his fellows in certain specified traits; all were well acquainted with one another. He found that similarity of traits favored compatibility, and that "the most popular person will have moderately high surgency, [i.e., extroversion], very high will-character, and very low perservation. The most unpopular person will have very high surgency, very low will-character, and very high perservation." Much has been made of the desirability of extroversion, but Cattell says that while moderate extroversion is associated with popularity, it is also strongly associated with unpopularity. "Persons of low surgency are neither very frequently popular nor unpopular. It is as if surgency accentuates and brings into the social limelight whatever attractive or unattractive qualities present, without itself being intrinsically pleasant or unpleasant (though very surgent temperaments may be slightly repellant)."

Popa[35] (1935) again discourses upon social intelligence, particularly in relation to the psychology of the leader. In his first article, he says that social intelligence is of two sorts: active and passive. He now builds up the thesis that the social intelligence of the large majority of people is reduced to the passive aspect, i.e., adapting to the social environment without changing it. It is the superior individuals who adapt the environment to their needs; they are the leaders, and the social values are their products.

[30] Agatha Bowley, "A Method of Rating Sociability in Young Children," *Pedagogical Seminary and Journal of Genetic Psychology*, XLV (1934), 266–69.

[31] T. M. Newcomb, "Behavior Observations as a Measure of Individual Acceptance by a Summer Camp Group," *Psychological Bulletin*, XXXI (1934), 726–7.

[32] Marie Zillig, "Beliebte und Unbeliebte Volksschulerinnen," *Archiv für die Gesamte Psychologie*, XCII (1934), 121–40.

[33] Popa, "Criterii Pentru Definirea Inteligentii Sociale," *Satul si Sceala*, IV (1934), 70–7.

[34] R. B. Cattell, "Friends and Enemies: a Psychological Study of Character and Temperament," *Character and Personality*, III (1934), 55–63.

[35] G. Popa, *Inteligenta Sociala si Psihologia Conducatorului*. Cluj, Rumania, Editura Revistei Satul si Sceala, 1935. Pp. 112.

Doll,[36-41] has issued several publications dealing with social competence. His work was carried on at the Training School at Vineland, New Jersey, and is concerned with the mentally deficient inmates. He devised the Vineland Social Maturity Scale. It was first issued in preliminary form; revisions of the experimental form resulted in the finished test. The scale consists of one hundred and seventeen behavior items arranged in approximate order of maturation from birth to adult life. The central purpose of each item is to represent some aspect of the ability to look after oneself. The measurement of intelligence, skill, and achievement is avoided. The importance of knowing the degree of social maturity of the individual is expressed thus by Doll: ". . . the social status [he uses "status" in the same sense as "competence"] of the individual is the basic point of departure for a large variety of practical uses in scientific studies in those social sciences where human adjustment is a consideration." Like Yepsen's work in 1928, the value of Doll's investigations is with retarded and feeble-minded persons rather than normal persons. Social proficiency, however, is important at low as well as at high mental levels.

Miss Johnson and Terman[42] (1935) made a study of the personality characteristics of happily married, unhappily married, and divorced persons. This study throws light on the traits that help people to get along well with others, and also the reverse. Their subjects were one hundred couples in each of three groups: happily married, unhappily married, and divorced; they made a total of three hundred couples, or, six hundred people of both sexes. They were given the Bernreuter Personality Inventory and the Strong Vocational Interest Test. It was found that the "outstanding traits of the happily married, both husbands and wives, include emotional stability, social adaptability, uplift interests, and a tendency to conservatism, the men showing more tolerance and sympathy than the women. The unhappily married give most evidence of neurotic and introvertive tendencies, intolerant attitudes, and volitional inadequacy."

Vreeland and Corey[43] (1935) made a study of college friendships. For their study, they selected thirty pairs of friends, both members of each pair being of the same sex. Their results suggest that "intelligence and scholarship, as well as prejudices regarding intellectual questions not a part of the student's immediate experience, were relatively unimportant, but that degrees of neuroticism and social intelligence play some role in the selection of friends."

Washburne[44] (1935) published the results of his test of social adjustment. The well-adjusted were found to be slightly more objective than the maladjusted, more sympathetic, more poised (sharp distinction here), happier and less impulsive, more purposeful and to possess greater socialness. The social adjustment score of an individual was found to be related to success in school in the same degree as, but independently of, intelligence. Doubtless there is a relationship between social proficiency and social adjustment.

Miss Mallay[45] (1935) made a study of some of the techniques underlying the establishment of successful social contacts at the preschool level. In pevious works much was said in regard to the virtue of sociability. Miss Malley distinguishes between contacts in general and successful contacts. Her experiments were concerned with twenty-one children from the Vassar College Nursery School. Success in making social contacts at all ages seemed to be due to the type of approach made by the child rather than to the individual personality pattern behind it. Success in maintaining social contacts also rested on the techniques used. While sociability does increase with age, success in social contacts does not necessarily improve. She stressed the point that nursery school guidance in social behavior is more important in development than the maturation of the

[36] Edgar A. Doll, "The Clinical Significance of Social Maturity," *Journal of Mental Science*, LXXXI (1935), 766–82.

[37] Edgar A. Doll, "A Genetic Scale of Social Maturity," *American Journal of Orthopsychiatry*, V (1935), 180–90.

[38] Edgar A. Doll, "Measurement of Social Competence," *Proceedings of the American Association on Mental Deficiency*, XL (1935), 103–23.

[39] Edgar A. Doll, "Preliminary Standardization of the Vineland Social Maturity Scale," *American Journal of Orthopsychiatry*, VI (1936), 283–93.

[40] Edgar A. Doll, "The Vineland Social Maturity Scale," *Training School Bulletin*, XXXII (1935), 1–8, 25–32, 48–54, and 68–74.

[41] Edgar A. Doll, *The Vineland Social Maturity Scale*, Revised Edition. Vineland, N. J., Training School, 1935.

[42] Winifred Bent Johnson, and Lewis M. Terman, "Personality Characteristics of Happily Married, Unhappily Married, and Divorced Persons," *Character and Personality*, III (1935), 290–311.

[43] Francis M. Vreeland, and Stephen M. Corey, "A Study of College Friendships," *Journal of Abnormal and Social Psychology*, XXX (1935), 229–36.

[44] John N. Washburne, "A Test of Social Adjustment," *Journal of Applied Psychology*, XIX (1935), 125–44.

[45] Helena Mallay, "A Study of Some of the Techniques Underlying the Establishment of Successful Social Contacts at the Preschool Level," *Pedagogical Seminary and Journal of Genetic Psychology*, XLVII (1935), 431–57.

children. Thus to Miss Mallay, social proficiency is more of a learning process than a maturational one.

Miss Mallay[46] (1936) pursued this problem of successful social contacts further. She studied fifty-six students in the three upper classes at Vassar, composed of two groups of twenty-eight members each. The reason for the two groups was because of the differences existing in the types of dormitory life lived by the respective groups. Data were collected by means of observations, tests, and interviews. Of these, Miss Mallay says, "The following traits seemed to be among the personality factors facilitating the initiation and maintenance of successful social contacts: vivacity in social approach, tolerance—willingness to accept one's neighbors as they are, ability to engage in light conversation, ability to maintain an even predominantly happy mood, and generosity and social interdependence." There were also certain immediate factors in the friendships, such as rooming near each other, having common friends, going in for the same extra-curricular activities, being in the same classes, and knowing each other before coming to college. The factors considered most important in the formation of friendships were virtually the same for both groups, the listing being in slightly different order. Miss Mallay's lists are as follows:

Group A:

Generous-considerate.
Tolerant of other's opinions.
Lends a hand willingly.
Similar recreational interests.
Similar cultural interests.
Speaks readily and interestingly on many topics.
Keen sense of humor—witty.
Similar extra-curricular activities.
Meets people easily.
Good listener.

Group B:

Tolerant of other's opinions.
Generous-considerate.
Keen sense of humor—witty.
Lends a hand willingly.
Speaks readily and interestingly on many topics.
Similar recreational interests.
Meets people easily.
Similar cultural interests.
Good listener.
Loosens up easily—is carefree.

The factors considered least important by both groups are given as follows:

Group A:

Resembles you in height and weight.
Has attractive brothers.
Spends much time in the library.
Goes to movies frequently.
Spends much time eating off the campus.
Has good clothes.
Is up on the latest fiction.
Dances well.
Spends much time in the smoking room.
Has travelled much.
Plays bridge well.
Likes to lead.
Is high-brow.

Group B:

Resembles you in height and weight.
Spends much time in the library.
Much concerned with week-ends.
Goes to movies frequently.
Spends much time eating off the campus.
Has good clothes.
Is up on the latest fiction.
Dances well.
Serious about work.
Has travelled much.
Plays bridge well.
Likes to lead.
Is high-brow.

Miss Bogardus and Miss Otto[47] (1936) made a study of the social psychology of chums in which they examined the reasons for such friendships. It was a questionnaire study based upon the replies of one hundred and thirty-eight men and one hundred and sixty-two women students at the University of Southern California. The chum-friendships studied involved at least a four-year duration. The chums reported more similarities than dissimilarities; this substantiates earlier findings in regard to "birds of a feather flock together." In fact, the so-called chumships were based on two-thirds similarities to one-third dissimilarities. In many cases, however, chums differed in sociability or mixing

[46] Helena Mallay, "A Study of Some of the Factors Underlying the Establishment of Successful Social Contacts at the College Student Level," *Journal of Social Psychology*, VII (1936), 205–28.

[47] Ruth Bogardus, and Phyllis Otto, "Social Psychology of Chums," *Sociology and Social Research*, XX (1936), 268–70.

ability, and sometimes a chum admired in the other the trait which was lacking in himself. Miss Bogardus and Miss Otto give the qualities liked best in chums in order of preference, and state them as follows:

Men:	*Women:*
Character (high ideals).	Kindly disposition.
Congeniality.	Sincerity.
Sense of humor.	Character (ideals).
Kindly disposition.	Friendliness.
Frankness (straightforward).	Sympathetic understanding.
Sincerity.	Sense of humor.
Serious nature.	Common interests.
Loyalty.	Companionship.
Good sport.	Gaiety.
Determination.	Loyalty.
	Unselfishness.
	Poise.
Honesty (trustworthy).	Intelligence.
Deep thinker.	Stimulating.
"Just like me."	Independence.
Gaiety and wit.	Dependability.
Optimistic (enthusiasm)	Neatness.
Common sense.	Cooperation.
Good manners.	Charming manner.
Thoughtfulness.	Enthusiasm.

The following dissimilarities were reported to exist between the chums:

Men:	*Women:*
Social ability.	Religion.
Appearances (physical).	Sociability.
Attitude toward studies.	Appearances.
Occupational choices.	Temperament.
Sports.	Studiousness.
In art.	Artistic ability.
Ideals.	Determination.
	Attitude toward boys.
	Serious mindedness.
Men:	*Women:*
Dating.	Participation in sports.
Evaluation of girls.	Recreation.
Talents.	Outlook in life.
Temperament.	Kindly disposition.
Intelligence.	Home life.
Hobbies.	Economic standards.
Character.	Intelligence.
Religion.	Efficiency.
Smokes and drinks.	Standards (ideals).
Attitude toward leisure.	Age.
Dancing ability.	Dancing.
Athletic ability.	Ambition.
	Occupational choices.

Bogardus and Otto worked out a table showing the extent of similarities and dissimilarities, as follows:

	Men:		Women:	
	Similar	Dissimilar	Similar	Dissimilar
Standards and ideals	88.7	11.2	88.2	11.8
Going to foot-ball games	85.8	14.1	76.5	23.6
Neatness in dress	84.3	15.6	86.3	13.7
Determination	76.9	23.0	69.2	30.8
Dancing	71.2	28.9	80.0	20.0
Loaning money	71.2	28.9	70.2	29.8
Participation in sports	71.1	28.8	55.4	44.6
Drinking	67.1	32.9	74.6	25.4
Group interests	66.1	33.8	66.7	33.3
Fondness for children	65.5	34.4	70.5	29.5
Cultural interests	63.6	36.3	69.2	30.8
Going to church	62.5	37.5	53.8	46.2
Smoking	60.7	39.2	65.7	34.3
Studying	58.2	41.7	68.0	32.0
Going shopping	53.6	46.3	58.9	41.1
Grades in class work	52.7	47.2	60.9	39.1
Hobbies	52.6	47.3	46.5	53.5
Reading fiction	50.7	49.2	48.8	51.2

Young[48] (1936) checked upon the theory that the scholastically brilliant are socially inept. He studied a class of three hundred men students at Colgate University at the end of their freshmen year. He concluded that there was no appreciable relationship between scholarship and social adjustment judged in terms of the following criteria: number of class mates to whom known by name, number of classmates by whom rated, average degree of liking expressed for others, and average rating received from others.

Miss Hardy[49] (1937) investigated social recognition at the elementary school age. Her study was based on the theory that social recognition of children by their playmates is

[48] C. W. Young, "Scholarship and Social Adjustment," *School and Society*, XLIII (1936), 607–8.

[49] Martha Crumpton Hardy, "Social Recognition at the Elementary School Age," *Journal of Social Psychology*, VIII (1937), 365–84.

a good criterion of their desirable patterns of social behavior. Her subjects were two hundred and fifteen white boys and one hundred and ninety-four white girls whose average age was nine years, and who were enrolled in grades three to nine. Data were secured by means of reports and rating by the teachers in regard to attitude of the class toward the particular pupil, and by expressed companion preferences by the pupils themselves. The child whom associates esteem highly is superior to the average individual in the group, and she concluded that social recognition during the elementary years is closely related to the individual's ability to distinguish himself from his classmates. There was a positive relationship between popularity and behavior patterns, that is, the ability to work and play amicably with others. Differences between popular and unpopular pupils, however, were least marked in traits called emotional and in certain overt behavior such as disobedience, bosterousness, temper outbursts, and stubbornness. The socially successful pupils were attractive, two-thirds of them being attractive physically while less than one-fifth of the unpopular ones were thus endowed. Conversely, one-twentieth of the popular ones were "homely" whereas slightly over one-fifth of the unpopular ones were thus described. Home conditions had something to do with popularity; the socially successful group had superior home conditions to the unpopular pupils. The children from the better class home environment were more friendly toward children with like environment. In this as in several other studies, socio-economic status seems to be a factor in social proficiency.

Pintner, Forlano and Freedman[50] (1937) attacked the problem of personality and attitudinal similarity among classroom friends. These studies dealt with eight hundred and nineteen children in grades five to eight, ages nine to sixteen, from three schools in New York City and one small school in New York state. Their findings differ from certain other studies in that they minimize the importance of similarities. "The friend is just as likely to differ from, as to resemble, the child in question. The positive correlations with C. A. and M. A. lead us to conclude that physical maturity and to some extent mental maturity are far more potent in influencing friendship than are the personality traits we have assumed we are measuring."

Wells[51] (1937) was of the opinion that intelligence is essential to a development of social morality, but did not of itself dispose thereto. To carry the thought farther, intelligence is necessary to social proficiency of the greatest refinement, but not all intelligent people devote the necessary thought and discipline required to attain it.

Winslow[52] (1937) studied the extent of agreement between friends' opinions and their ability to estimate the opinions of each other. He devised a questionnaire and gave it first to eighty-six students in a class in General Psychology, and then each student gave the questionnaire to a friend of the same sex. It was found that there were rather marked differences in the amount of agreement between the opinions of friends. He says, "This difference may be a real one in determining friendships in the two sexes. Boys may well be attracted to each other as friends on the basis of a felt unanimity of opinion, whereas girl friendships are determined by personality and emotional factors." He states that with girls friendships are formed in spite of a known dissimilarity of opinions, and once established, it is in part responsible for an increasing similarity of opinions. In general, friends possess considerably more similarities than could be expected by chance.

Lundberg and Lawsing[53] (1937) went into the sociography of certain community relations in a small Vermont village. They concluded that by a comparison of choices of friends with scores on the Chapin socio-economic scale, there is a clear tendency for people to name as friends individuals of higher status than their own. This study dealt, of course, entirely with adults.

Corey[54] (1937) examined professed attitudes and actual behavior. His data showed that overt behavior, as measured by the extent to which students will change their test papers when allowed to do their own grading, is not related to attitudinal scores derived by

[50] R. Pintner, G. Forlano, and H. Freedman, "Personality and Attitudinal Similarity Among Classroom Friends," *Journal of Applied Psychology*, XXI (February 1937), 48–65.

[51] F. L. Wells, "Intelligence and Socialization," *American Journal of Psychiatry*, XCIII (1937), 1265–91.

[52] Charles Nelson Winslow, "A Study of the Extent of Agreement between Friends' Opinions and their Ability to Estimate the Opinion of Each Other," *Journal of Social Psychology*, VIII (November, 1937), 433–42.

[53] G. A. Lundberg, and M. Lawsing, "The Sociography of Some Community Relations," *American Sociological Review*, II (1937), 318–35.

[54] Stephen M. Corey, "Professed Attitudes and Actual Behavior," *Journal of Educational Psychology*, XXVIII (1937), 271–80.

means of the Corey unsigned attitude questionnaire. This suggests that the social proficiency of an individual in any situation is unpredictable.

Dimock[55] (1937) devoted considerable attention to friendships, popularity, and social behavior of the adolescent boy. He found that there was a tendency for boys who are best friends to be similar in the general level of their behavior adjustment; boys with a wider acceptability in the group appear to be much better adjusted socially. Dimock states, "The most illuminating of the correlations is that between the behavior adjustment scores of boys and the acceptability scores (.58). It strongly suggests that the social attitudes and conduct of the boy are much more influential in determining his status or degree of acceptability among the members of his group than are his age, mental ability, proficiency in skills, physical appearance, or any of the elements included in the study of both the camp and the community cases." Also, the acceptability of a boy in a group depends not only on the kind of behavior that he exhibits, but also upon the quantity or frequency of the behavior. Dimock found that certain kinds of conduct greatly influence acceptability, particularly the first five listed:

Cooperates and helps willingly.
Is courteous and considerate of others.
Assumes leadership in group.
Is truthful and "above board" in conduct.
Controls temper in annoying situations.
Is unselfish with food and belongings.
Displays resourcefulness and initiative.
Carries out accepted responsibilities.
Observes rules and regulations.
Contributes well-considered suggestions to thinking of the group.
Observes good etiquette.
Participates in chosen activities with enthusiasm.
Is neat and careful of belongings.
Practices musical appreciation (this point was said not to be a vital one).

He found that certain other items made for unpopularity, especially the first five:

Shows off, bluffs, boasts, seeks limelight.
Bullies, is quarrelsome, arouses antagonism in others.
Thinks he is "picked on", misunderstood.
Carries grudges, is resentful.
Uses excuses, alibis, escape mechanisms.
Domineers, acts superior.
Fidgets, twitches, bites nails, shows nervousness.
Is over-dependent, turns to others for help in things he should decide for himself.
Is timid, withdraws, prefers to be alone.
Is stubborn, sulky, sullen.
Is easily hurt, over-sensitive.
Uses profanity.
Is unhappy, depressed, dissatisfied.
"Grouches," finds fault with others.
Disturbs group meetings, "roughhouses," etc.
Displays obscenity in talk, reading, etc.
Blushes easily, appears embarrassed, is bashful.
Imaginative and dreamy.
Fears dark, water, and being alone. (This latter point made very little or no difference).

Holmes and Hatch[56] (1938) studied personal appearance as related to scholastic records and marriage selection in college women. Over six hundred women at the University of California were subjects of the study. They were divided into four groups: beautiful, good-looking, plain, and homely. Only Caucasians were considered and none were over thirty years old. The women were rated by three observers. The authors state that "beauty plays a very important rôle in marriage selection within the class of individuals studied." In the first group, 34 per cent married; in the second group, 28.05 per cent; in the third group, 15.66 per cent; and in the fourth group, 11.25 per cent. As only 55 per cent of the women graduates of the University of California marry, a more discriminate selection is made possible among college women. Physical attractiveness was shown in other studies to be an important factor in popularity; thus beauty may be considered a factor in social proficiency.

Miss Burks[57] (1938) investigated some factors related to social success in college. The subjects were twenty-six students: thirteen men and thirteen women. They were all pronounced successes or pronounced failures in personal social relations with men,

[55] Hedley S. Dimock, *Rediscovering the Adolescent; a Study of Personality Development in Adolescent Boys*. New York: Association Press, 1937. Pp. xx + 287.

[56] S. J. Holmes, and C. E. Hatch, "Personal Appearance as Related to Scholastic Records and Marriage Selection in College Women," *Human Biology*, X (1938), 65–76.

[57] Frances W. Burks, "Some Factors Related to Social Success in College," *Journal of Social Psychology*, IX (1938), 125–40.

with women or with both. They were given a battery of tests: (1) social situations adapted from the George Washington Social Intelligence Test, (2) the Strong Vocational Interest Blank, and (3) a questionnaire of one hundred and sixty-one items, one hundred and fifty-eight of which were taken directly or modified from the Hamm-Wadsworth Temperament scale plus three invented by the author. She found that the following general behavior characteristics facilitated successful social relations:

Natural, unforced humor based on exaggeration, self-ridicule, incongruity, and unexpected language.

Genuine sympathetic interest in people.

Vividness and originality of expression (in conversation).

Constructive ideas relative to difficult situations.

Sincerity and directness of expression without impertinence.

Active sense of responsibility.

Adaptability.

Certain other factors were associated with unsuccessful social relations:

Forced humor, or that which depends on ridicule of others, or is suggestive.

Self-absorption to the partial exclusion of genuine sympathy with others.

Vagueness and lack of originality of expression (in conversation).

Formal or self-righteous moralizing about situations.

Hypocrisy or impertinent frankness.

Irresponsibility.

Lack of interest in generally popular recreational activities.

Lack of adaptability.

All the factors listed seemed to be relatively independent, the presence of some of them compensating for the lack of others in any one individual. There were some sex differences. Sympathetic interest was especially important in dealing with the same sex, whereas vividness of conversation was in dealing with the opposite sex. Extreme humility and lack of initiative were related to lack of success with the opposite sex. There was a tendency toward restrained behavior among successful boys, but a tendency toward comparatively unrestrained behavior among successful girls.

Thomas and Young[58] (1938) made an investigation as to the factors that made one like or dislike persons. The subjects were six hundred and seventy-six students in an elementary psychology course at the University of Illinois. They found that intelligence, consideration, cheerfulness, and friendliness contribute most to popularity, especially intelligence. Beauty, however, is an important factor in men's preferences for women. Conceit is by far the greatest reason for disliking others. Selfishness, deceit, snobbishness, self-centeredness, and the like, are also leading reasons. "It is important to note that of the traits which make one well liked the most important describe the attitude or behavior of one person towards another in *social* situations: consideration, cheerfulness, helpfulness, loyalty, generosity, kindness, friendliness, etc. Females, in particular, like persons who are kind, thoughtful, and who are willing to do things for them." The authors classified the following traits as making for liking while the absence of them made for unpopularity:

Intellectual traits.
Intelligence, wit, humor, cleverness, etc.

Attitude toward others.
Generosity, helpful, kindness, etc.

Physical appearance.
Neatness, beauty, physique, etc.

Attitude toward life and environment.
Idealism, ambition, carefree, etc.

Attitude toward self.
Modesty, self-confidence, etc.

Personal habits.
Trustworthiness, truthfulness, discretion, etc.

Talents and activities.
High degree of musical, athletic, or other ability, leadership.

It is evident that the experimental data pertaining to social proficiency is both scattered and incomplete. However, certain factors emerge as will be discussed in the summary of this chapter.

[58] William F. Thomas, and Paul T. Young, "Liking and Disliking Persons," *Journal of Social Psychology*, IX (1938), 169–88.

Section 2

The George Washington Social Intelligence Test and Related Literature

In 1926, Moss, Hunt, Omwake, and Ronning[59] issued the George Washington Social Intelligence Test. This test was designed to measure one's ability to get along with others. It consists of six tests: Test 1, Judgment in social situations; Test 2, Memory for names and faces; Test 3, Recognition of mental states from facial expressions; Test 4, Observation of human behavior; Test 5, Social information; and Test 6, Recognition of the mental state of the speaker. The authors recommended it as useful in placement and guidance of high school, normal school, and college students, in selection of employees for positions in which the ability to get along with others is important, in occupational surveys by social and municipal organizations, in clinical and vocational guidance testing, and also in the testing of delinquent groups. There seems to be considerable emphasis on business situations, however.

Moss and Hunt[60] (1927) wrote a popular account of the test. They advanced the idea that age had little influence on one's social intelligence other than allowing more time in which to demonstrate an "innate" social intelligence; also that women are superior in matters requiring tact and recognition of behavior. Debatable points advanced by Moss and Hunt were that social intelligence is not a quality gained in positions requiring it, and that one's amount of social intelligence is just as much a part of one's inheritance as is stature.

Miss Hunt[61] (1928) wrote a highly favorable description of the test and its value. She reaffirmed the stand taken by Moss and herself in 1927, in regard to its findings and its value.

Broom[62] (1928) gave the George Washington Social Intelligence Test and the Thorndike Intelligence Examination to two hundred and fifty-eight students in the San Diego State Teachers College. The results seemed to indicate that the two tests measured the same variable or variables to some degree at least, or that it would mean that social intelligence and abstract intelligence are so closely allied that they cannot be discriminated.

Garrett and Kellogg[63] (1928) made a study of the relation of physical constitution to general intelligence, social intelligence, and emotional instability. Morphologic indices were obtained from the photographs of two hundred and twenty-one Columbia University freshmen; these were correlated with the Thorndike Intelligence Examination for High School Graduates, the George Washington Social Intelligence Test, and the Woodworth Personal Data Sheet. These tests were used as measures of general intelligence, social intelligence, and emotional instability respectively. A simplified form of the Nacarati "morphologic index" was used as a measure of physical constitution. Among other things, they found a correlation of .42 (.52 corrected for attenuation) between the scores of the Thorndike test and those on the Social Intelligence test, and they concluded that this suggests that the latter test is, to a certain degree, a measurement of intelligence.

Pintner and Upshall[64] (1928) published some results of social intelligence tests. They correlated the scores of fifty students in Teachers College of Columbia University, with their scores on the Gilliland Sociability Test, a community-of-ideas test, and a general intelligence test. The first two correlations were low; i.e. .12 and .04 respectively, while the latter was as high as .68. Therefore the authors raise the questions as to whether the George Washington Social Intelligence Test measures a unique social ability or whether social and abstract intelligence are so closely correlated that it is unprofitable to discriminate between them.

Miss McClatchy[65] (1929) wrote a theoretical and statistical critique of the concept of social intelligence and of attempts to measure such a process. The intent of the paper is not to present the thesis that social intel-

[59] F. A. Moss, Thelma Hunt, K. T. Omwake, and M. M. Ronning, *Social Intelligence Test*. Washington, D. C.: Center for Psychological Service, 1926. Pp. 8.

[60] F. A. Moss, and Thelma Hunt, "Are You Socially Intelligent?" *Scientific American*, CXXXVII (1927), 108–110.

[61] Thelma Hunt, "Measurement of Social Intelligence," *Journal of Applied Psychology*, XII (1928), 317–34.

[62] M. E. Broom, "A Note on the Validity of a Test of Social Intelligence," *Journal of Applied Psychology*, XII (1928), 426–9.

[63] H. E. Garrett, and W. N. Kellogg, "The Relation of Physical Constitution to General Intelligence, Social Intelligence, and Emotional Instability," *Journal of Experimental Psychology*, XI (1928), 113–29.

[64] R. Pintner, and C. C. Upshall, "Some Results of Social Intelligence Tests," *School and Society*, XXVII (1928), 369–70.

[65] Vivienne Robison McClatchy, "A Theoretical and Statistical Critique of the Concept of Social Intelligence and of Attempts to Measure Such a Process," *Journal of Abnormal and Social Psychology*, XXIV (1929), 217–20.

ligence cannot be defined or measured, but to point out the reasonableness of supposing that the valid measurement of such an ability should fit into the results of other investigations, either by logic or experimentation. She gave the test to three groups of young women, and to a fourth group gave the Colgate University Introversion-Extroversion Personal Inventory. She particularly attacks Hunt's and Moss's statements that social intelligence is purely a matter of inheritance.

Broom[66] (1930) made a further study of the validity of the George Washington Social Intelligence Test. The percentile scores of the Thorndike Intelligence Examination and the George Washington Social Intelligence Test from six hundred and forty-six freshmen at the San Diego State Teachers College were compared. The stand taken differs from the publication in 1928 by the same author. "The sum total of the evidence points to the conclusion that social and academic intelligence are truly different variables. The error, when we secure marked correlation between measures of the two variables, is not in our theoretical conception of the differing phases of intelligence and their relationships; it lies in our crude attempts to measure the variables accurately."

Miss Strang[67] has devoted considerable attention to the matter of measuring social intelligence. In 1930 she wrote on the relation of social intelligence to certain other factors. Three hundred and eleven students taking a course for deans and advisors at Columbia University constituted the group involved in the study. The George Washington Social Intelligence Test was given and these scores studied in relation to general intelligence test scores, grades in the course, success in advising, scores made on the Gilliland questionnaire, occupation of father, nationality, place of birth, amount of self support, experience as a teacher, extent of voluntary advisory work, salary and age. The correlation of the social intelligence test with a general intelligence test was .44; with the other items, with the exception of term grade, the correlations were low and insignificant. As a result, she questions whether social intelligence is a unique ability, and whether the George Washington test measures it, for these reasons: (1) social intelligence and general intelligence may be related parts of a total organic attitude, not separate abilities; (2) social intelligence test used may measure only one aspect of social intelligence—an informational rather than a functional aspect; (3) the measures of the other factors studied may be inadequate; and (4) the group studied may not be typical.

Miss Strang[68] (1932) derides the George Washington Social Intelligence Test in her analysis of errors made in a test of social intelligence. Her study is based on the responses of three hundred and twenty-one women graduate students of the George Washington Social Intelligence Test. Among other faults, the author saw little relationship between certain items in the test and the overt sociability of an individual.

Robert Thorndike[69] (1936) made an attempt to determine whether the George Washington Social Intelligence Test measured any unitary trait which is distinct from the ability measured by an abstract intelligence test. For the latter, he used the George Washington Mental Alertness Test. Thurstone's simplified method of factor analysis was used. Results were obtained from the scores of five hundred students taken at random entering George Washington University in 1932 and 1933, of two hundred and fifty students entering in 1934. The conclusion is "that though the George Washington Social Intelligence Test may tap slightly some unique field of ability, it measures primarily the ability to understand and work with words which bulks so large in abstract intelligence tests."

Miss Burks[70] (1937) investigated the relation of social intelligence test scores to ratings of social traits. Her results were based on a study of fifty Stanford University women students. They were given the George Washington Social Intelligence Test, and then composite ratings on each were secured by means of having sorority sisters rate them on the following social traits: social prestige, social knowledge, social desire, and ability to inspire affection. It was found that there is no significant relationship between scores on the

[66] M. E. Broom, "A Further Study of the Validity of a Test of Social Intelligence," *Journal of Educational Research*, XXIX (1930), 403–5.

[67] Ruth Strang, "Relation of Social Intelligence to Certain Other Factors," *School and Society*, XXXII (1930), 268–72.

[68] Ruth Strang, "An Analysis of Errors Made in a Test of Social Intelligence," *Journal of Educational Sociology*, V (1932), 291–9.

[69] Robert L. Thorndike, "Factor Analysis of Social and Abstract Intelligence," *Journal of Educational Psychology*, XXVII (1936), 231–3.

[70] Frances W. Burks, "Relation of Social Intelligence Test Scores to Ratings of Social Traits," *Journal of Social Psychology*, VIII (1937), 146–153.

social intelligence test and these ratings. Obviously those recognized to be socially proficient should have had the highest test scores if the test had been valid.

Robert Thorndike and Stein[71] (1937) made an evaluation of the attempts to measure social intelligence. They assert that the George Washington Social Intelligence Test is unsatisfactory in that it has yielded low coefficients of correlation in studies of validity, does not correlate with other tests of the social side of the individual, and show relatively high correlation with tests of abstract intelligence. Furthermore, "it seems doubtful whether any test which is predominantly verbal can measure social ability."

Thus is would appear that the George Washington Social Intelligence Test has been weighed and judged over a period of time and has been found wanting in validity.

Section 3

Data Other Than Experimental

Certain other works besides the purely experimental literature has been considered in regard to social proficiency, or as it is generally termed, social intelligence. The approach in these volumes is in general philosophical, although some are based upon scientific data.

Gordon Allport[72] makes some recent observations in regard to social proficiency. In brief he says, "It has been suggested that a third major type of intelligence is found in an individual's ability to act effectively in social situations. But it is obvious that 'social intelligence' cannot be an inherited capacity to the extent that abstract and mechanical intelligence may be. It is rather a *trait* developed through opportunity and through interest, upon the basis of a native general intelligence." As Allport explained in a previous article,[73] a trait has the following characteristics:

1. It has more than nominal existence.
2. It is more generalized than a habit.
3. It is dynamic or at least determinative.
4. Its existence may be established empirically or statistically.
5. Traits are only relatively independent of each other.
6. A trait of personality, psychologically considered, is not the same as a moral quality.
7. Acts and even habits, inconsistent with a trait, are not proof of its nonexistence.
8. A trait may be viewed either in the light of the personality which contains it or in the light of its distribution in the population at large.

Thus Allport stresses the fact that social proficiency as a trait depends on experience and training to a very great extent, and also, it is a "generalized trait." To quote further from Allport:[74] "Social intelligence is not a matter of performing one act on all occasions, but of varying (even reversing) behavior according to circumstances. For this reason it is absurd to regard social intelligence as a congeries of specific habits," and further, "to do and to say the tactful thing requires a prognostication of a person's most likely responses. Hence social intelligence is linked with the ability to make swift and almost automatic judgments of people. On the other hand social intelligence is not identical with *Menschenkenntnis*, for it does not necessarily imply *deep* knowledge of an individual, nor the capacity to systematize and to express one's judgment. Social intelligence lies at the behavioral rather than at the conceptual level. It leads to social adjustment, but not necessarily to profound understanding."

Charters and Waples[75] in the *Commonwealth Teacher–Training Study* made a list of traits of the teacher. The possession of such traits were believed to lead to successful teaching relationships, and thus may be considered traits of value in social proficiency. Their condensed list reads as follows:

1. Adaptable.
2. Attractiveness, personal appearance.
3. Breadth of interest (community, profession, pupils).
4. Carefulness (accuracy, definiteness, thoroughness).

[71] Robert L. Thorndike, and Saul Stein, "An Evaluation of the Attempts to Measure Social Intelligence," *Psychological Bulletin*, XXXIV (1937), 275–85.

[72] Gordon W. Allport, *Personality, a Psychological Interpretation*, p. 407. New York: Henry Holt & Co., 1937. Pp. xiv + 588.

[73] Gordon W. Allport, "What is a Trait of Personality?" *Journal of Abnormal and Social Psychology*, XXV (1931), 368–72.

[74] Op. cit., p. 426 and 516.

[75] W. W. Charters, and Douglas Waples, *The Commonwealth Teacher-Training Study*, p. 18. Chicago: University of Chicago Press, 1929. Pp. xx + 666.

5. Considerateness (appreciative, courtesy, kindly, sympathy, tact, unselfishness).
6. Co-operation (helpfulness, loyalty).
7. Dependability (consistency).
8. Enthusiasm (alterness, animation, inspiration, spontaneity).
9. Fluency (i.e., with speech).
10. Forcefulness (courage, decisive, firm, independent, purposeful).
11. Good judgment (discretion, foresight, insight, intelligence).
12. Health.
13. Honesty.
14. Industry (patience, perseverence).
15. Leadership (initiative, self-confidence).
16. Magnetism (approachability, cheerful, optimism, pleasant, sense of humor, sociability, pleasing voice, wittiness).
17. Neatness (cleanliness).
18. Open-mindedness.
19. Originality (imaginativeness, resourcefulness).
20. Progressiveness (ambition).
21. Promptness (dispatch, punctuality).
22. Refinement (conventionality, good taste, modesty, morality, simplicity).
23. Scholarship (intellectual curiosity).
24. Self-control (calmness, dignity, poise, reserve, sobriety).
25. Thrift.

Most of the literature does not distinguish between an active and a passive social intelligence. Thus, available works do not clarify the matter of leadership as a factor in social proficiency. Laird[76] did suggest that the display of authority endangered one's social proficiency; thus to be socially proficient and yet be a leader, one must be careful not to "step on someone's toes." Bogardus[77] quotes the findings of E. H. Moore in regard to leadership qualities. The traits that make for leadership are: democratic attitudes, vitality, positiveness, friendliness, enthusiasm, sympathy, trustworthiness, and perseverence. Anti-leadership trait are: indifference, narrowness, timidity, affectation, egotism, silliness, fickleness, and stubbornness. Bogardus summarizes that a leader is a person who exerts special influence over a number of people. Thus by definition, the leader possesses what Popa called active social intelligence, while the average person who gets on well with others is described as having passive social intelligence.

Various recipes have been published on "how to get along with people," "how to be popular," and the "secret of 'this and that.'" Most of these popular treatises are based on a high ethical approach; the social and the moral values get somewhat entangled.

Bennett[78] declares that the secret of getting along with others is found in the Golden Rule—"do unto others—." These general principles of conduct are: (a) respecting human rights, live and let live, (b) recognizing each as worthy of attention and consideration, and (c) each desiring friendship and love and yet each having a realm in his personality where he wishes others to enter only upon invitation, in other words, "mind your own business." One should have a real interest in the welfare and happiness of others. Integrity of purpose and action is necessary, but this does not mean the elimination of tact and the like. Tolerance of the attitudes of others is important. Appearance counts, and skill in some prevailing activities is a factor. Bennett gives the requisites of friendship as follows:

1. Mutual attraction of personality.
2. Mutual interests.
3. Complementary interests.
4. Similar attitudes, ideals, and standards of conduct.
5. Absence of obnoxious or personally displeasing manners or personal habits.
6. Neatness of appearance.
7. Wearing qualities.
8. Dependability.
9. Unselfishness and mutual interest in each other's welfare and happiness.
10. Possibilities for mutual give and take.

In Dale Carnegie's[79] highly publicized work, six ways are listed in which to make people like one:

1. Be genuinely interested in other people.
2. Smile.
3. Remember names.
4. Be a good listener.

[76] Donald A. Laird. *How to Use Psychology in Business.* New York: McGraw-Hill Book Co., 1936. Pp. ix + 378.

[77] Emory S. Bogardus, *Leaders and Leadership.* New York: D. Appleton-Century Co., 1934. Pp. viii + 325.

[78] M. E. Bennett. *Building Your Life.* New York: McGraw-Hill Book Co., 1935. Pp. vii + 335.

[79] Dale Carnegie, *How to Win Friends and Influence People.* New York: Simon and Schuster, 1936. Pp. 337.

5. Talk in terms of the other man's interests.
6. Make the other person feel important (but be sincere about it).

Carnegie is of the opinion that all success hinges upon the feeding of one's desire for self-esteem. In other words, his theory is the same as that of Laird, who stressed the necessity for the inflation of the ego in order to be socially proficient.

Chase[80] in a popular article, asks "How many friends have you?" He says that "the three most desirable assets of a human being . . . are: bravery, good taste, and ability to love and to be loved. They are the elements of friendship."

Crane[81] asserts that the secret of friendship and popularity is this: "Whenever you leave a person feeling more satisfied with himself as a result of his contact with you, he will like you." It is a matter of inflating their ego.

Leeper[82] makes this observation: "One's effectiveness in dealing with others depends upon one's ability to contribute to the motivational satisfaction of others."

Link[83] says this: "Personality, let us remember, is measured by the extent to which the individual has acquired habits and skills which interest and serve other people." In other words, one's social proficiency is thus measured.

Wright[84] tells how to get along with people. He says that these traits make people like one: cheerfulness, sympathy, modesty, self-restraint, tolerance, honesty, gratitude, helpfulness, veracity, tact, unselfishness, energy, dependability, and self-reliance. The elements of popularity are to be found in one who likes other people, has energy, is tolerant, is not suspicious, is cheerful, has tact, and is not quarrelsome. In order to behave in a socially proficient way, one should recognize certain universal characteristics of people: they like to feel their own importance, they like to grant favors, they like other people to know about them, they dislike being under an obligation that is a burden to repay, they have their pet hobbies, they like to think your interests are the same as theirs, they like to be asked for advice, they like to share confidential information, and they like to have their small wants studied. Wright takes exception to the idea that leadership is the supreme expression of the talent for getting along with people. He says that such is not the case, for a leader may possess many qualities that may make him personally disliked. He does, however, possess in abundance these qualities: willpower, knowledge, enthusiasm, self-confidence, energy, responsibility, and courage.

[80] Joseph Cummings Chase, "How Many Friends Have You?" *American Magazine*, CXIV (August, 1932), 44–5.

[81] George W. Crane, *Psychology Applied*, p. 216. Chicago: Northwestern University Press, 1932. Pp. xii + 586.

[82] Robert Leeper, *Psychology of Personality and Social Adjustment; a Handbook for Students*, p. 37. Mt. Vernon, Iowa, Cornell College Bookstore, 1937. Pp. 80.

[83] Henry C. Link, "Amusements and Personality," *Readers Digest*, XXXII (March, 1938), 37–39.

[84] Milton Wright, *Getting Along with People*. New York: McGraw-Hill Book Co., 1935. Pp. ix + 310.

Section 4

Summary

The term, *social proficiency*, is not used in the literature which has been reviewed. Such terms as *social intelligence* and *sociability* have been the terms most frequently used. However, the trend of these various studies has been toward analyzing certain aspects of the ability to get along well with people. Because of the incompleteness of previous studies, it appears necessary to study further the foundations and manifestations of social proficiency. It would seem to be particularly desirable to find a device that would measure one's social stimulus value or the ability to get along well with people. Such a device would supplement other personality tests, such as the Washburne Social Adjustment Inventory, which aims to measure one's degree of adjustment, and the George Washington Social Intelligence Test, which purports to measure one's ability to work with others. The making of such a test to measure social proficiency is the writer's purpose in this study.

The search through the experimental literature showed that the findings in regard to social proficiency, ranging from the very socially proficient person to the very socially inept, were given in terms of traits. The vast majority of these studies were concerned with merely small phases of personality and social behavior; hence, there was little organization or classification of behavior traits in terms of high or low degree of social proficiency to be found in the experimental literature. The writer was also cognizant of the fact that an individual does not react in his human relations in terms of his individual traits but in

terms of his whole personality. On the other hand, these traits are important, for it is these traits which people observe in the individual and upon which they base part of their estimates of him.

The experimental studies on the social proficiency of individuals indicate that the range of traits exhibited by a person is not so important as the frequency and intensity of the overt manifestations of these traits. The really important factors in social proficiency lie in these overt human relationships. From evidence collected it appears that the highly socially proficient person would have the characteristics that the writer will now describe.

The highly socially proficient person must, first of all, have the ability to take people as they are and to appreciate them for their worth. He must invite a mutual give and take. His reactions must be based upon a real interest in the welfare and happiness of others. He is universally friendly and likes people, recognizing each individual as being worthy of attention and consideration.

Those combinations of traits tending to boost the egos of others seem to be the clue to the highly socially proficient individual's success with people. He contributes to the satisfaction of others, feeding their desires for self-esteem. This may be deliberately and subtly done or may be because of a genuine interest and more or less fixed habits of thought and action. He makes other people feel important, the remembering of names being a common technique in this regard. He meets people easily, speaks readily and interestingly on many topics, but does not monopolize the conversation. He is always a good listener.

Being considerate of others is a third characteristic of the highly socially proficient person. He is universally courteous. This does not mean a rigid observance of a ritualistic type of behavior but rather a courtesy based upon the consideration of the feelings of others. Tact is one of his never failing resources, the quality that caused Queen Victoria to drink tea from a saucer because a guest did so. Thoughtfulness of others is never neglected. "Do unto others—" is his by-word. Unselfishness is a part of this and probably has its roots in fair play and justice. He goes out of his way to help others, lending a hand willingly in his cooperation with others. He is tolerant of the opinions of others. Though he may differ, he recognizes basic human rights—"live and let live." He shares confidential information but keeps to himself those things that have been confided to him. With all his considerateness, however, he is careful not to carry this to an extreme; people dislike being put under an obligation which is difficult to repay.

A fourth characteristic of the highly socially proficient individual is his ready adaptability. This adaptability is expressed in each of the qualities already discussed, but more is implied by this characteristic. The highly proficient individual is a good companion, congenial and harmonious. He has a stimulating effect upon others, and they enjoy his society. One of the main reasons for his popularity is that he guides the conversation so that it is in terms of the other man's interests. Moreover, he studies the small wants of others and he is thus enabled to render various courtesies that are simple in themselves and appreciated by the recipients. However, people do not feel comfortable with a demigod; therefore this individual minimizes the superiority between himself and those less gifted by various devices such as asking the opinion of others now and then.

A fifth characteristic of the socially proficient individual is that he is careful of his personal appearance, including personal habits. This, then, includes both his person and his possessions. His clothing need not be in the latest style, but they must be clean, neat, generally pleasing and not eccentric. His fingernails are clean; he does not offend with either body odor or halitosis; he does not pick his nose nor cough without using a handkerchief.

Overlapping the matter of appearances, but embodying more than appearance, is the sixth characteristic, that of good manners. Good manners are more than pleasing actions displayed to equals and superiors. The highly socially proficient individual is just as polite to the clerk in the store as to his boss. He is courteous because of what he is rather than what the other person is. His observation of rules and regulations are really a part of his good breeding. He puts aside his own immediate impulses in the interests of the common good. This, of course, makes it easier for him to be considerate of others and adapt himself to changing circumstances.

A seventh trait is normal intelligence. The highly socially proficient person need not be a Phi Beta Kappa. However, such is not a drawback if he has the other necessary qualities. What is important is that he have normal intelligence and possess "common sense." Men more than women admire a "deep thinker" and a "serious nature." This individual, however, should at least be able to contribute well-considered suggestions to group thinking and use good judgment.

An eighth trait of the highly socially proficient person is that he have a normal degree of maturity, at least to the extent that he has put away infantile characteristics. For example, in trying situations, he does not indulge in a temper tantrum but remains poised and in control of the overt expression of his emotions. He is not quarrelsome. He always acts in a natural manner, his manner and smile being an expression of an inner serenity. He is characterized by cheerfulness, optimism, carefree spirits, friendliness, and is the proverbial "good sport." His participation in activities of any sort is enthusiastic and whole-hearted. He is energetic in everything he does. He is not dignified in the sense of being stiff and formal; on the other hand he is neither silly nor too familiar. Gaiety, wit, and a sense of humor comprise "standard equipment," but not in extreme doses. For example, he does not keep the limelight constantly nor go in for practical jokes. Rather, he uses his good spirits and easy laughter as an appreciative applause for someone else. He is known for his kindliness, modesty, sincerity, and straightforwardness. He is not a political radical. Valuable as such individuals have been, the possession of radical views does not make for smooth relations with people in general.

A ninth characteristic of the highly socially proficient person is an ability to assume some degree of leadership within the conventions of society. He has certain qualities of leadership such as courage, determination, self-restraint, independence, self-reliance, resourcefulness, and initiative. He is not, however, characterized by the intensely strong will and forcefulness of the true leader. A powerful leader does lead but he also makes enemies. The highly socially proficient person may be a leader on some occasions, but if so, it is because he expresses the concensus of the group rather than having shaped the group to his desires.

A tenth characteristic is a character with ideals and ethics of a high order. The highly socially proficient person has a combination of many basic virtues. He has integrity but not of the reformer sort, for tact is always to be used. He is truthful and candid in his conduct. He is loyal to his friends and expresses gratitude whenever gratitude is due. This, however, does not mean that he is prudish and he certainly is not an austere type of individual; he is a true realist and consciously or unconsciously senses the futility of trying to change someone else to suit his mold.

Besides these ten characteristics of the highly socially proficient person, it must be understood that any person may be adjudged to be highly socially proficient by those who are similar to him in general intelligence, background, taste, interests, activities, character, manners, and degree of neatness in taste and dress. He may differ widely, however, on religion, political attitudes, prejudices, skill in games, and scholarship. In other words, any individual may be adjudged to have a high degree of social proficiency if he conforms to his group in regard to matters of standards and general conduct but may be independent in other ways provided he does not bring it to other peoples' attentions nor combat others' views. Certain similarities then may give one status and prestige in certain groups. However, it is also true that these similarities can exist and yet not contribute. They seem to be factors when other elements necessary to a friendship are also present rather than being a strong predisposing cause.

There are then many traits entering into the making of a highly socially proficient person. These traits working together may be classified into ten characteristics, each overlapping one or more of the others, but each independent enough to throw some light on social effectiveness. Those the author has enumerated as follows:

Taking people as they are.
Inflating the ego of others.
Being considerate of others.
Being adaptable to changing circumstances.
Being careful of personal appearances.
Displaying good manners.

Having a normal degree of functional intelligence.
Having a normal amount of emotional maturity.
Being able and willing to assume leadership when group consensus calls for such leadership.
Possessing a high character without attitudes of reform and holiness.

An eleventh characteristic that aids the highly socially proficient person is:

Having certain similarities to the group as a whole.

Besides exhibiting these positive characteristics in regard to relations with people, the literature draws some conclusions in regard to negative characteristics. The literature is consistent in this respect, for the reader will observe that the behavior of the socially inept individual includes the opposite extremes of the traits suggested for the socially desirable approach to human relationships.

The highly socially proficient individual avoids "I" as much as possible. He does not discuss his personal troubles, for that bores other people. He is "backward about being forward," never intrusive, bold, or brazen. He is not "bull-headed" about having his own way but is willing to accede to the wishes of the group. In no situation does he display a domineering and "know-it-all" attitude. This applies also to differences in opinions, for he never takes the initiative in an argument or contributes to one. He does not get out of patience with modern ideas. He does not generally ask favors of others, although occasionally he may find it permissible depending upon the person, time, and place. People may do things that annoy him, but he keeps it to himself. He does not reprimand people when they do things that displease him. He does not gossip about others, tell people what is right and wrong, not point out what their moral duty is. He does not try to correct the mistakes of others, being aware that people cannot be easily changed, and aware that no one appreciates having his shortcomings deplored. Briefly, the highly socially proficient person does not possess these qualities which arouse antagonism and dislike.

Of course, the writer recognizes the fact that no individual possesses all the characteristic qualities that the experimental literature implied for the highly socially proficient person. The qualities and traits previously discussed were culled from a number of experimental studies dealing with personality, many of these studies dealing with special phases of personality and only incidentally with social proficiency. It is to be emphasized, too, that the possession of one or a few traits functioning singly, or in a complex way, may overshadow many undesirable traits. In other words, it is very possible for an individual to be highly proficient socially because of one or a few traits that he possesses to an intense degree, even though he may at the same time possess many undesirable traits.

In the discussion of the highly socially proficient person that the author has just made, he was aware that most, if not all, traits vary in degree, and that the individual low in social proficiency probably possess these traits in an opposite amount. The writer, however, was drawing his conclusions entirely from the literature. Also, the terminology for the reverse of the traits mentioned is given in a negative form, such as discourteous for courteous, self-centeredness for consideration of others, intolerance for tolerance, annoying habits for satisfying habits, and so forth. Other factors that make a discussion of traits difficult is that the individual does not use his traits singly in his social relations; he reacts in terms of the various characteristics of his personality functioning as a complex whole; and finally, there is little evidence in the literature to indicate a hierarchy of traits as related to social proficiency.

A combing of the literature also reveals some qualities of the socially inept person, or the individual possessing a low degree of social proficiency. The socially inept person is ineffectual in his relations with others. He is either so colorless that people tend to be unaware of his existence or so poorly adjusted socially that everyone dislikes him. In other words, he is either the subserviant type—submissive, meek, cringing—that does not so much arouse dislike as contempt, or else the type that is a really disturbing individual. In other words, he is the possessor of the "insistent personality." He is interested first of all in himself and mentions his exploits, tastes, and views even to the extent of forcing opportunities to display them. When obliged to listen to other people's achievements, he does so with a detached or disinterested air. He indulges in cutting re-

marks and laughs at people's mistakes or accidents. He talks about people behind their backs.

The socially inept person deflates the ego of others whenever possible. He finds fault with practically everything. He is ill-tempered. On the other hand, he is quick to resent the lack of proper respect to himself and he holds grudges. He displays his possessions in a boastful manner. He is domineering. When he wants to impress one, he is so obsequious and flattering that his insincerity is at once apparent. He takes it upon himself to reform and enlighten his associates according to his views.

The socially inept individual pays no attention to the feelings and wishes of others. Tact is merely a word in the dictionary as far as he is concerned. He creates a bad impression on those whom he meets by his indifference and rudeness. He talks if he feels like it, even monopolizing the conversation. On the other hand, he may prefer to respond only by grunts and monosyllables. The art of listening is not one that he cultivates, for even in a silent mood it is evident that he does not think much of what is being said. He often has the annoying habit of keeping up the conversation by asking questions and by asking people to repeat what they have just said. His bragging and profanity may become a nuisance. He uses other people's belongings without permission and imposes on others for cigarettes and the like. He returns borrowed articles in bad condition, or even may neglect to return them at all.

The socially inept person is non-adaptable. He does not care for co-operative enterprises. If forced into a common undertaking, he does it with poor grace, doing just as little as possible. He will not admit faults and shortcomings on his own part, but uses excuses, alibis, and various other escape mechanisms. He would not think of going out of his way to help someone else. He makes no effort to evade an argument. He nearly always expresses himself on the opposite side of a question. He always has an opinion on everything, there being nothing to which he cannot give an answer. People shun his society when at all possible. He is too calloused to imagine that there might be reasons for his unpopularity.

The socially inept individual worries very little over his personal appearances. Conventions as to dress are unimportant to him, and added to this, his clothes may be uncared for and dirty. He may wear inharmonious color combinations and often dispenses with a necktie on those occasions in which a necktie is necessary for social effectiveness. Disagreeable personal habits accompany disagreeable habits of dress, such as the picking of teeth and cleaning of fingernails in public.

The socially inept individual may consider good manners to be something written by Emily Post, but he has never read the book.

The intelligence of the socially inept person may be quite as good as that of the highly socially proficient person. Rather than having a tolerant attitude, he is dogmatic and often has but a superficial knowledge of the things which he discusses. His intelligence, however, is not a deciding factor in his maladjustment, for it is on the emotional side that he fails.

The socially inept individual lacks the degree of social maturity that is expected of one of his age and station in life. He may be timid, imaginative, or dreamy, and prefer to be alone. More often, however, he is an exhibitionist and a bluffer. If something goes wrong or someone crosses him, he may fly into a rage. He is very likely to be quarrelsome. He tends to be a bully, in which case he will take advantage of others whenever possible. He has a variety of maladjustments which may be expressed in various ways, such as being stubborn, sulky and sullen, or unhappy, depressed, and dissatisfied. He may be over-sensitive and easily hurt, for it seems to be true that the individual who is the least considerate of others is very touchy about how others treat him. Often he will think he is being discriminated against and misunderstood. His antagonism toward the world is met with antagonism. Frequently, he is accused of silliness, for he enjoys practical jokes. He also attracts attention to himself by his noisy or rough behavior. He is often offensive because of his leanings toward obscenity in his talk and his reading. His personality is such that it repels other people. He is inclined to meet the world with a frown instead of a smile. His society is both disagreeable and depressing. He may be over-dependent on others, turning to others for help in things that he should decide or

do for himself; but usually he is extremely satisfied with his own solutions.

The character of the socially inept person has defects, although his poor emotional adjustment to life is his main stumbling block. He may be actually mean and grasping, untruthful, insincere, ungrateful, dishonest, untrustworthy, and selfish. His ideals and standards of conduct are low.

In concluding this description of what the literature has to say in regard to social proficiency, whether considered from the standpoint of the very socially proficient person or from the standpoint of one who has a low degree of social proficiency, it will be seen that the characteristics entering into social proficiency are as previously listed in this chapter.

From the available published data on factors pertaining to social proficiency, it appears that certain qualities contributing to social effectiveness are emphasized. The table which follows has been made to indicate the frequency with which they are mentioned. However, because of differences in terminology used by various authors, the classification is necessarily a loose one. The fact that one characteristic may be named more frequently than another does not necessarily mean that it is more important, but rather that it has received more attention in the literature.

LIST OF THE QUALITIES MOST FREQUENTLY MENTIONED IN THE LITERATURE AS CONTRIBUTING TO AN INDIVIDUAL'S SOCIAL PROFICIENCY

General Characteristic:	Frequency: Times
Taking People as They Are	8
Inflating the Ego of Others	5
Being Considerate of Others	18
Being adaptable in Social Situations	9
Making a Good Personal Appearance (including Natural Good Looks, Dress and Habits)	13
Displaying Good Manners	7
Having a Normal Functional Intelligence	8
Having a Normal Degree of Emotional Maturity	10
Being Able and Willing to Lead if Necessary	5
Having a High Character Without a Spirit of Reform or Holiness	6
Similarities to Associates, including Socio-Economic Status (i.e., Conformity to Group Standards, etc.)	14

CHAPTER III

OVERVIEW OF THE PRESENT INVESTIGATION

The lack of knowledge as to what really constitutes social proficiency is a barrier to both teacher and parental guidance of the youth of today, as well as being a hindrance to all those people in business and social life who seem unable to work effectively with others, to follow and to lead, and to make a good social impression upon others within the conventions of society. It is a commonplace that the social norms are changing, changing so rapidly that there is little agreement as to such standards among people in the different walks of life. Examination of the experimental literature gave considerable differences of opinion, with a minimum of real information as to either the traits or the factors entering into social proficiency. The purpose of this study is to devise and validate some sort of a device for measuring social proficiency, employing such information and understanding as can be brought to bear upon the problem in our present state of knowledge.

The problem has its logical setting in the following hypotheses: (1) that the social proficiency of an individual is significantly influenced, if not determined, by the reactions of others to him in his various group interactions, (2) that the way the individual handles his social relationships with others, consciously or unconsciously or both, is probably the most important factor, for it is from the behavior qualities or traits of the individual that others get impressions and form opinions of him; (3) that the behavior factors of the individual probably include knowledges, skills, judgments, and attitudes resting upon certain conscious or unconscious principles but expressed in terms of techniques; and finally (4) that one's social proficiency is changeable, at least in part, by knowledge, experience, maturity, and desire to change it.

Three groups of subjects were employed in the investigations. In the preliminary Wisconsin study (see Chapter IV), there were one hundred and thirty-nine University of Wisconsin juniors and seniors (sixty-five men and seventy-four women) enrolled in the regular session, and one hundred and eighty summer session students (eighty-eight men and ninety-two women). The one hundred

and thirty-nine students who were enrolled for the regular session were rated for their degrees of social proficiency and became the criterion group for this investigation. The subjects were divided into an upper, middle, and lower group, after which they were given a test designed to measure social proficiency. The test performances of the upper one-third were checked against the lower one-third for item validation, resulting in a test of seventy-two items. The test was then administered to the summer session students in order to make comparisons between the sexes as well as comparisons between undergraduate and graduate students. Performances on the test scores were checked against the American Council Psychological Examination, the George Washington Social Intelligence Test, and the Washburne Social Adjustment Inventory.

A second study was then conducted at the Wisconsin State Teachers College at La Crosse (see Chapter V). This group of sophomores, juniors, and seniors was composed of one hundred and twenty-one subjects (sixty-nine men and fifty-two women). The subjects in this group rated each other by the order-of-merit method. From the averages of these ratings, the students were subdivided into upper, middle and lower groups. A test different from the one used in the preliminary Wisconsin study was administered to these subjects. Of these items, eighty-five survived the validation technique.

The final Wisconsin study (see Chapter VI) was conducted at the University of Wisconsin, consisting of fifty-seven junior and senior students (twenty men and thirty-seven women). These subjects were given the seventy-two items that had survived the validation technique of the preliminary Wisconsin study and the eighty-five items that had survived the validation technique of the La Crosse study. It was thought that an acid test of the survival value of these items might be obtained if they be administered to this group, rated by their associates according to each rator's own definition and standard of social proficiency, since social proficiency, by definition, is the social stimulus value of the individual as revealed by his group situations. This criterion group was subdivided as before into three groups, and the test performance of the upper one-third was checked against the lowest one-third for item validation. The fifty-two items that survived this last technique constituted the author's final test on social proficiency.

In order to make certain that this test was not measuring intelligence or the purported goals of other personality tests, this social situations test was correlated with the American Council Psychological Examination, the George Washington Social Intelligence Test, the Washburne Social Adjustment Inventory, and the Sims Score Card for Socio-Economic Status.

CHAPTER IV

PRELIMINARY WISCONSIN STUDY

In the light of the theory of social behavior discussed in Chapter I and the experimental literature (see Chapter II), it was decided to construct a social situations test of the multiple-choice sort. A social situations test with valid alternatives was thought the most desirable approach to this problem. In order to have the test consist of social situations of interest to college students, sixty students in the laboratory sections of a course in Social Development and Education at the University of Wisconsin during the fall semester of 1937/38, as well as fifty-eight other students in the same laboratory sections during the spring semester of 1937/38, were used for the purpose of obtaining social situations and the validation of responses. These laboratory students had studied various tests in personality, had prepared statistical analyses, and had made interpretations of the results of these tests. They were junior and senior students well prepared to make the contribution expected of them. They were cooperative in the study and interested in its results. After having been made aware of the general purpose of the study, these students were given the following directions:

> "Write ten situations that you have experienced or have known other students to have experienced during the past year. As nearly as possible select those situations in which you yourself are uncertain as to the correct behavior to employ, or those in which it is important for an individual to react properly to gain group approval. In each case discuss the situation in enough detail so that the reader may know what was actually involved in the situation, as well as what was done, and what you think should have been done."

The clause in the above paragraph suggesting that the students might describe the experiences of others was inserted primarily to allow students to utilize some of their own experiences toward which they might feel sensitive if attributed to themselves, but toward which they would feel free to answer if they could suggest these as experiences of others. It was also recognized that students are familiar with many episodes of their friends, and that these would be as valid and perhaps as valuable as their own experiences.

The students were given two weeks in which to prepare these situations, so there was no need for hasty work. To make the assignment easier, it was suggested that they might write one situation a day, selecting the most important situation that they had been in or had heard about during that particular day.

The result of this assignment was a total of about one thousand situations, from which a situations test might be derived. The writer then reduced the description of these situations to two or three sentences describing the situation briefly, but including its pertinent factors. About three hundred of these situations in their revised form were then read aloud to the second semester laboratory group of fifty-eight students, and each member of the group wrote down his first reaction as to what he thought he would do in that particular situation. Some of these responses were in terms of physical behavior and some were in terms of what the individual would say under the circumstances. The result was a wide range of possible alternatives for each situation.

The writer then carefully analyzed the free responses to each of these situations to classify similarities and dissimilarities. Two hundred and three situations showed enough differences in the free responses to be included in the test.

This test was then administered to one hundred and thirty-nine undergraduates, mostly juniors and seniors, at the University of Wisconsin.

Next, the writer attempted to determine whether or not the answers to these items would give any measure of the social adaptability of the subjects. In this initial study it was thought desirable to use the findings of previous studies as a point of departure (see Chapter II). The qualities most frequently mentioned in the literature were found to be taking people as they are, inflating the ego of others, being considerate of others, being adaptable in social situations, making a good personal appearance, displaying good manners, having a normal functional intelligence, having a normal degree of emotional maturity, being able to lead if necessary, having a high character without a spirit of reform or holiness, and being similar to associates. These characteristics (since each characteristic involves many traits, and expresses and formulates a guide to conduct) might even be called the principles of social proficiency. These principles formed the basis for the criterion which was selected in this study.

In order to simplify the situation somewhat, it was decided to make four categories of social effectiveness which would form the criteria against which the subjects could be rated for the purpose of establishing the validity of the test. Since the writer had to depend upon many students to rate other students, it was also thought that if the categories were to be most effective, each category should be reduced to one paragraph in length and that all categories should be described on one page. With the literature as a basis, the author prepared a statement of social proficiency and four categories of social proficiency, each expressing certain degrees and qualities of social proficiency. (See Fig. I).

FIG. I. DEFINITION AND FOUR CATEGORIES OF SOCIAL PROFICIENCY

Social proficiency is the way in which one handles relationships with other people. A person will fall into one of the following categories because he has these qualities in general, or certain of them in abundance. Doubtless, no individual can be found who will possess all of them.

Group I:

This type gets on fairly well with other people. In general he is socially proficient with whom he desires or accepts as friends, but is not particularly so with those in whom he is not interested. He is thus not uniformly kind, generous, etc. His habits are generally good. He observes good rules of etiquette, but sometimes does not observe the underlying spirit of good manners,—that is, consideration of others at all times. His appearance and intelligence is satisfactory. His disposition is generally good, although it may get a "sour" note if strained. His character is average; he has lapses, but is generally fair, reliable, and honest.

Group II:

This type contributes to the self-esteem of others or to their satisfaction or their egoistic impulses. This implies kindliness, thoughtfulness, generosity, and tact. He avoids arousing antagonism in others either by negativistic behavior or by annoying them by such practices as frequently referring to his own affairs or by correcting others' mistakes. When with him, one feels a community of interests and similarity of views. His habits are wholesome and constructive. He is courteous and has poise. He dresses neatly and in good taste, and is clean and tidy. His intelligence may be ordinary or high, but he does have "common sense." His disposition or temperament is pleasant, friendly, cheerful, and well-balanced. His character and standards are of a high order. He can be trusted. One leaves his society regretfully.

Group III:

This type is generally ineffectual in his relations with others. He arouses antagonism or contempt, such as by being a "know-it-all," a bully, a bore, or a "milk-toast" type of person. He is constantly referring to himself and he habitually argues or differs verbally with the opinions of others. He is a grouch and a fault-finder. He has many disgusting habits such as picking his nose. He has bad manners. His appearance is slovenly and careless. He may be intelligent enough, but he is intolerant, domineering, and quarrelsome. His temperament is decidedly unpleasant and his character and standards are low. He is inclined to be vulgar, mean, and untrustworthy.

Group IV:

This type does not get on well with other people. He may be in this class by choice; he may not be especially gregarious, or he may not wish to pay the price of popularity, i.e., conformity to the group. He may be a very fine character intrinsically, but he "rubs people's fur the wrong way." The reason for this may be self-centeredness, or an ungroomed appearance, or bad manners, or a domineering personality. He may have a rather low character and thus be offensive to many, but have good manners and appearance which make him acceptable to some. His temperament or disposition is a low average, that is, he cannot be relied upon to be cheerful and pleasant; a trying situation can send him into a temper or some other emotional display.

It will be noted that in the description for the four types, Group II represents the individual with the greatest social proficiency, Group I is second, Group III is the most inept, and Group IV is superior to Group III, but inferior to Groups I and II.

The one hundred and thirty-nine subjects were then rated according to these categories. Fifty-eight members of a class in Social Development and Education were rated by their own members, each member rating all those that he felt intimately enough acquainted with to rate according to these categories. Averages were then made to locate the position of each of these subjects. Each of the other subjects rated by three judges qualified to do careful rating, because of a close acquaintance with the subjects and to an acceptable knowledge of rating procedures.

The members of the entire group were then placed in either category one, two, three, or four. As there were only three subjects placed in Group III, the lowest category, these three were combined with the subjects in Group IV for statistical analysis. There remained thus three groups: an upper group, a middle group, and a lower group.

The writer proceded next to the validation of test items. After a review of the validation literature, it was decided that the Votaw[1] technique was the most adaptable.

A chart was constructed showing the number of subjects within each group who chose each of the alternatives for each of the two hundred and three items. The percentage of cases in the upper and lower groups for each alternative was then computed and the Votaw test applied. Items were retained in which a critical ratio of at least two was found for one or more of the alternatives. In the items retained, a critical ratio of less than one was given a zero weight, a critical ratio of one a weight of one, a critical ratio of two a weight of two, a critical ratio of three a weight of

[1] David F. Votaw, "Graphical Determination of the Probable Error in the Validation of Test Items," *Journal of Educational Psychology*, XXIV (December, 1933), 682–86.

The Votaw curve determines statistically significant differences between the proportion of individuals answering an item in the upper group and the proportion of individuals answering the same item in the lower group. The symbols used are the following:

P_1 = proportion of the upper group answering the item.
P_2 = proportion of the lower group answering the item.
N = number in the upper group.
K = some multiple of the critical ratio which may be decided upon.

$$h = \frac{.6745K}{N}$$

The following formula will then hold good for all items:

$$P_1 = \frac{2P_2 + h^2 \pm \sqrt{(8h^2 + 4h^4)(P_2 - P_2^2) + h^4}}{2(1 + h^2)}$$

For any given number of individuals N is fixed. Let K equal four; then h also has a definite numerical value. The formula for P_1 is a function of P_2 alone. By letting P_2 take values between 0 and 1, the corresponding P_1's may be computed. Each number-pair, P_2 and P_1, determines a point on the graph. If P_1 is plotted along the y-axis and P_2 along the x-axis of a graph and a smooth curve drawn through the ensuing points, one can then evaluate any number of items for a group of this particular size.

Items which correspond to points which lie above the curve discriminate significantly between the upper and lower groups.

three, and a critical ratio of four a weight of four. Negative weights were determined in the same manner. The greatest negative critical ratio was four. A constant four was added to all critical ratio values to eliminate negative weightings. These weightings, after the constant four had been added, were taken as the assigned weights for the alternatives in the scoring of the test. The analysis here described eliminated one hundred and thirty-nine items, leaving a test consisting of seventy-two.

The mean square contingency coefficient for these remaining seventy-two items was .77. Since this coefficient in a 3x10 classification could never reach more than approximately .90, this was considered a very satisfactory coefficient of validity. The product-moment correlation was .85.

Attention was directed next to the reliability of this seventy-two item test by the method of split-halves. In making this calculation, the weighting for each alternative was multiplied by the number of subjects who had selected that particular response. The total weightings were then added, and the average for each item found. These averages were then ranked for the seventy-two items, which were then split into halves. Each item was assigned a number from one to seventy-two according to its rank. They were divided into halves as follows: 1, 4, 5, 8, 9, 12, 13, 16, 17, 20, 21, and so forth in one half, and numbers 2, 3, 6, 7, 10, 11, 14, 15, 18, 19, 22, 23, and so forth in the other half.

Having assigned each item to either one half or the other, the scores for each subject for the two halves were recalculated and the Pearson product-moment correlations found. This was stepped up by the Spearman–Brown formula. The reliability coefficient thus found was $.81 \pm .021$. Considering the homogeneous group of university juniors and seniors for which the coefficient was calculated, the writer considers the reliability acceptable.

To get further information about the nature of the ability measured, the writer com-

TABLE I

CORRELATION BETWEEN THE SOCIAL SITUATION TEST AND THREE OTHER TESTS

(A) Social Situation Test and American Council Psychological Examination

(Percentile Ranks)

	Social Situations			American Council		
	Total Group	Males	Females	Total Group	Males	Females
N	79	38	41	79	38	41
M	299.57	297.37	301.61	61.75	65.74	58.05
σ	38.92	40.73	37.05	22.11	22.84	20.59
PE_M	2.93	4.40	3.90	1.70	2.45	2.20
r				.136	.154	.143
PE_r				.075	.108	.105

(B) Social Situations Test and George Washington Social Intelligence Test

	Social Situations			Social Intelligence Test		
	Total Group	Males	Females	Total Group	Males	Females
N	42	12	30	42	12	30
M	305.93	297.00	309.50	128.29	127.92	128.43
σ	42.02	38.38	42.87	11.87	14.89	10.43
PE_M	4.40	7.40	5.20	1.25	2.90	1.30
r				.302	.529	.198
PE_r				.098	.145	.123

(C) Social Situations Test and Washburne Social Adjustment Inventory

	Social Situations			Social Adjustment Inventory		
	Total Group	Males	Females	Total Group	Males	Females
N	42	14	28	42	14	28
M	301.48	299.00	302.73	398.69	402.93	396.57
σ	46.41	46.01	46.56	25.43	16.82	28.55
PE_M	4.79	8.20	5.95	2.60	3.10	3.60
r				.229	.534	.156
PE_r				.100	.130	.125

pared the results of this test with intelligence and with several other personality tests upon those subjects for which data could be secured. The means, the standard deviations, and the Pearson product-moment correlations are given in Table I. Included in this table are comparisons between the author's social situations test and (1) The American Council Psychological Percentile rank (college grade); (2) The George Washington Social Intelligence Test; and (3) The Washburne Social Adjustment Inventory. The data are presented in Table I.

The coefficients of correlations were found to be extremely low, except in the case of the males in the comparisons with the George Washington Social Intelligence Test and the Washburne Social Adjustment Inventory. The two tests showed coefficients of .53 and .53 respectively, which is quite small.

The coefficients of correlation for the two social abilities test are both positive, which would indicate that the author's social situations test measures some phase of social behavior if these other tests do. The largest coefficient of correlation is between the Social Situations test and the George Washington Social Intelligence Test; on the other hand, the low coefficients of correlation show that the social situations test must certainly measure something very different from these tests. The correlation between the social situations test and intelligence, approximately .14, is low enough to indicate that the writer is measuring something else besides intelligence.

The test was next administered to one hundred and eighty summer session students (fifty-five male graduates, thirty-nine female graduates, thirty-three male undergraduates, and fifty-three female undergraduates) to secure further information relative to the nature of the test.

These data are shown in Table II.

It was found that the means for the graduate students were somewhat higher than those for the undergraduates and that the means for the undergraduate women were somewhat higher than those for undergraduate men.

The critical ratio between the means of the male graduates and the female graduates is 1.42 in favor of the latter, showing that there are ninety-two chances in one hundred that the graduate women will secure a higher score on this test than will the graduate men. Between the means of the male graduates and the male undergraduates there is a critical ratio of 2.76 in favor of the graduates, indicating with practical certainty (nine hundred and ninety-seven chances in one thousand) that this is a true difference and that, on the average, the male graduates will rank higher on this test than male undergraduates.

A critical ratio of 4.16 was found between the female graduates and the male undergraduates, and one of 2.6 between the female graduates and the female undergraduates, both in favor of the female graduate students. Both of these critical ratios indicate practical certainty that these differences in the mean are real differences, and that the female graduates will rank higher on the test than will the male undergraduates and female undergraduates.

The critical ratio between the male and female undergraduates of 2.75 in favor of the

TABLE II

INTERCORRELATIONS AMONG MALE GRADUATES, FEMALE GRADUATES, MALE UNDERGRADUATES, AND FEMALE UNDERGRADUATES, SECURED FROM THE SOCIAL SITUATIONS TEST ADMINISTERED TO ONE HUNDRED AND EIGHTY SUBJECTS

	N	M	σ	σ_M	σ_σ	Diff. M's	Diff. σ's	σ diff. M's	σ diff. σ's	C.R. diff. M's	C.R. diff. σ's
Male Graduates	55	329.85	25.23	3.53	2.4						
Female Graduates	39	337.31	22.02	3.51	2.5	—7.46	3.21	4.99	3.50	—1.42	.92
Male Undergraduates	33	316.06	20.92	3.55	2.6	13.79	4.31	5.00	3.55	2.76	1.56
Female Undergraduates	53	328.47	23.88	3.28	2.3	1.38	1.35	4.85	3.30	.42	.41
Female Graduates	39	337.31	22.02	3.51	2.5						
Male Undergraduates	33	316.06	20.92	3.55	2.6	21.25	1.1	5.10	3.60	4.16	.31
Female Undergraduates	53	328.47	23.88	3.28	2.3	8.84	—1.86	4.82	3.40	2.60	—.55
Male Undergraduates	33	316.06	20.92	3.55	2.6						
Female Undergraduates	53	328.47	23.88	3.28	2.3	—12.41	2.96	4.50	3.50	—2.75	.84

females indicates practical certainty that the score of the typical female undergraduate will surpass the score of the typical male undergraduate.

From the study of the critical ratios for the differences of the means, discussed above, it will be seen that the female graduates have the highest scores, the male graduates the second highest, the female undergraduates the third highest, and the male undergraduates the lowest scores. From these data, the conclusion can be drawn that the author's social situations test measures something associated with training, experiences and maturity. It is commonly agreed that the females are better trained socially than are the males. This test seems to bear out that contention. The results on this test would lead one to conclude that an individual learns in outside life how to adapt himself and get along socially. This would seem to be what one would expect if he were to indulge in reflections upon the subject. Likewise, these data seem to indicate that the females start out ahead of the men when they are young adults in school and that they maintain this lead after leaving school.

It will be observed from Table II that no critical ratio for the differences of the standard deviations is greater than 1.56, which is the one between the male graduates and male undergraduates. All others are below unity. This would seem to indicate that no one of these four groups is any more variable than the other.

TABLE III

CRITICAL RATIOS FOR THE DIFFERENCES BETWEEN THE MEANS ON ALL ITEMS SHOWING A CRITICAL RATIO OF TWO OR MORE

I Male grads. vs. Female grads.		II Male grads. vs. Male undergrads.		III Male grads. vs. Female undergrads.		IV Female grads. vs. Male undergrads.		V Female grads. vs. Female undergrads.		VI Male undergrads. vs. Female undergrads.	
Item No.	C.R.	Item No.	C.R.	Item No.	C.R.	Item No.	C.R.	Item No.	C.R.	Item No.	C.R.
1	3.1	1	3.8	1	3.4	2	5.8	2	4.0	2	—2.5
12	3.9	2	6.0	2	3.1	4	2.5	6	2.9	4	—3.8
17	—3.0	6	4.3	6	5.3	8	2.6	11	3.1	7	3.4
46	—2.5	9	4.1	19	2.8	9	2.7	15	2.2	8	3.9
56	—2.1	15	3.3	20	—2.4	11	3.8	23	2.0	9	—3.5
60	—2.3	19	3.6	33	—5.1	15	4.0	25	3.5	15	—3.1
70	—2.4	25	3.8	35	—5.6	17	3.1	27	2.7	20	—3.9
72	—3.1	30	2.6	45	3.3	18	2.5	28	—2.3	30	—2.1
		33	—5.4	46	—3.5	20	2.3	30	2.0	35	—2.5
		35	—3.5	47	2.1	22	3.7	33	—3.2	36	—2.9
		44	—2.0	48	3.4	25	3.8	34	3.8	37	2.8
		46	—7.6	49	—7.3	27	2.0	35	—3.3	41	—2.4
		47	3.6	50	2.4	30	4.5	39	—2.3	42	—2.4
		48	3.4	54	—4.9	33	—3.3	49	—8.0	45	2.0
		50	4.3	55	2.6	34	3.3	54	—2.9	46	2.0
		54	—3.3	62	2.7	35	—2.0	56	3.1	49	—3.7
		55	2.9	68	4.5	36	6.5	57	3.4	50	—2.7
		56	2.6			39	—2.8	68	3.1	56	—3.2
		62	5.4			47	4.2	70	2.0	60	—2.4
		68	4.5			48	2.3	72	3.7	65	—3.5
		69	—2.1			49	—2.8			67	3.9
						50	3.9			71	—2.6
						53	—2.0				
						56	5.4				
						57	3.8				
						60	3.2				
						61	2.8				
						62	2.5				
						65	3.5				
						66	2.1				
						68	3.1				
						70	2.6				
						72	4.1				

Having found that the test seemingly differentiated between the several groups classified as to male graduates, female graduates, male undergraduates, and female undergraduates as to total score, the writer began to question whether the individual items of the test would do the same. An item analysis was then made of the seventy-two items following the same six-way comparison among the four groups as previously discussed. In this analysis the critical ratios were found for the differences between the means and also the differences between the standard deviations.

Table III shows the critical ratios for all items and all comparisons that are greater than two in the difference of the means. It will be noted that there are two items in which the male graduates surpass the female graduates, and six items in which the reverse is true, leaving sixty-four cases where neither surpasses the other. In the comparison of the male graduates with the male undergraduates there are fifteen critical ratios in favor of the former and six in favor of the latter, leaving fifty-one in which neither group is certain of surpassing the other. In the comparison of the male graduates with the female undergraduates there are eleven items in favor of the former and six in favor of the latter, leaving fifty-five items favoring neither group significantly. In the comparison between the female graduates and the male undergraduates, there are twenty-eight items in favor of the former, and five in favor of the latter, leaving thirty-nine favoring neither. In the comparison between the female graduates and the female undergraduates, there are fourteen favoring the former and six favoring the latter, leaving fifty-two items favoring neither group. In the comparison between the male undergraduates and the female undergraduates, there are six items favoring the former and sixteen favoring the latter, leaving neither male nor female favored in fifty cases.

Although most of the significant differences seem to be in favor of the groups of older and female students, as noted in an earlier part of the discussion, the results are too erratic and inconsistent for the formulation of any conclusion from this item analysis.

The next step was to consider the standard deviations in the same manner as the means (see Table IV.). The critical ratios for the differences in the standard deviations in the six-way comparison were computed for each of the seventy-two items. In Table IV, the numbers of the items with their critical ratios are given for all items in which the critical ratio was two or greater.

In the comparison between the male graduates and the female graduates there are three items in which the men seem more variable and four in which the women do. There are sixty-five in which there are no significant differences. In the comparison of the male graduates with the male undergraduates, there are two critical ratios in favor of the former and fifteen in favor of the latter, leaving fifty-five with no significant differences in variability. In the comparison of the male graduates with the female undergraduates, there are eight critical ratios indicating the former as being more variable and with fifteen indicating the latter. There are forty-nine items without a significant difference in variability.

In the comparison between the female graduates and the male undergraduates, there are two items in which the female graduates are more variable, with fifty-six situations without a significant difference. In comparison of the female graduates with the female undergraduates, there are eight items in which the former vary more and twelve in which the latter do, with fifty-two items showing no significant differences. In the comparison between the male undergraduates and the female undergraduates, there are eleven items in which the males are more variable, and nine in which the females are more variable. Fifty-two items show no significant differences.

As in the case of the differences of the means, these differences in the standard deviations are so irregular and so inconsistent that no *bona fide* conclusion can be reached.

In the light of the analysis of all the data in this preliminary Wisconsin study, the author feels that the following conclusions can be drawn:

1. The social situations test measures some social ability not measured by either the George Washington Social Intelligence Test or the Washburne Social Adjustment Inventory.
2. The social situations test measures something other than intelligence as re-

TABLE IV

CRITICAL RATIOS FOR THE DIFFERENCES BETWEEN THE STANDARD DEVIATIONS ON ALL ITEMS SHOWING A CRITICAL RATIO OF TWO OR MORE

I Male grads. vs. Female grads.		II Male grads. vs. Male undergrads.		III Male grads. vs. Female undergrads.		IV Female grads. vs. Male undergrads.		V Female grads. vs. Female undergrads.		VI Male undergrads. vs. Female undergrads.	
Item No.	C.R.	Item No.	C.R.	Item No.	C.R.	Item No.	C.R.	Item No.	C.R.	Item No.	C.R.
1	—3.0	1	—3.0	1	—3.9	2	—5.1	2	—2.3	3	4.2
3	—2.8	2	—3.0	2	—3.3	3	—2.0	6	—4.3	4	5.9
16	—2.8	3	—6.0	3	—2.3	4	—5.5	12	2.9	6	—5.0
22	2.1	6	—3.8	6	—8.2	9	—2.5	14	—4.1	8	2.5
30	4.0	9	—2.0	8	2.1	14	—4.3	16	—5.1	14	3.2
44	—2.0	14	—4.9	14	—4.4	15	2.4	22	—11.0	22	—11.1
57	3.0	15	2.8	16	—9.4	16	—4.8	25	—4.1	27	—2.3
		16	—7.9	17	—2.8	21	—2.1	28	—2.4	28	4.7
		17	—3.0	20	2.4	25	—4.4	29	4.4	29	4.3
		19	—3.6	22	—9.2	30	—9.7	30	7.4	32	2.0
		25	—4.8	25	—5.0	31	—2.2	31	—2.5	35	2.0
		30	—6.1	28	3.2	36	—5.6	35	2.5	36	2.4
		36	—4.6	30	—4.9	46	—3.7	36	—3.8	41	—3.0
		46	—4.3	35	2.6	48	3.4	40	2.1	44	—4.0
		48	3.4	36	—3.3	49	—4.5	46	—5.5	49	7.4
		49	—4.6	44	—3.8	57	—4.9	48	2.6	56	2.6
		55	—2.0	46	—8.7			49	2.0	57	—2.9
				48	2.4			57	—7.6	58	—4.4
				49	2.0			63	2.5	62	—2.6
				52	2.0			72	—2.9	67	—2.4
				55	—2.9						
				63	2.1						
				72	—2.7						

vealed by its low correlations with the American Council Psychological Examination.

3. The social situations test does differentiate between the several social groups as judged by the criteria selected from the literature. The contingency coefficient of validity is .77, the product-moment coefficient of validity .85, and the Spearman–Brown reliability coefficient .81.
4. The social situations test would seem to indicate that there are certain social traits that can be acquired out of school.
5. The social situations test would seem to indicate that the females are better informed socially than the males of like age.
6. There are no significant differences between the standard deviations of the several groups, thus indicating that one group is no more variable than another.
7. There is no consistency in the manner in which any one item differentiates one of the four groups from the others.
8. There is no consistency in the variability of the groups for any individual item.

CHAPTER V

THE LA CROSSE STUDY

Following the preliminary Wisconsin study there was still some doubt in the mind of the author whether the four categories derived from the experimental literature afforded an ultimate criterion for the measurement of social proficiency. The author believed that a large group of subjects well acquainted with one another, trained in the techniques of rating others, and cognizant of the definition of social proficiency, could act as a body of judges for the purpose of rating themselves. Such a group was available at the Wisconsin State Teachers College at La Crosse. Two sections of General Psychology and two sections of Introductory Sociology were employed for this purpose. The students in all four of these sections were taught the different kinds of ratings, along with cautions to be observed in rating others, with partic-

ular emphasis upon the "halo effect." Social proficiency was described simply as the way the individual handles his social relations with others, his effectiveness in his various social situations, or his social stimulus value. The students were desirous of rating each other by an order-of-merit method and having their ranks or positions determined by averages derived from the total estimates of their associates.

The literature on rating appeared to sanction this particular technique. Ruch[1] had this caution to make in regard to rating: "(1) Be sure to define the trait to be rated and the limits of the steps in the scale which will be used to measure it; (2) use a large number of judges if necessary." This gave some little justification for describing social proficiency and also the use of many judges. Murphy[2] indicated that there might be value in averaging the judges' estimates: "When two hundred students are asked to arrange ten weights in order of magnitude, few make high scores, but the average score is in almost perfect agreement with the true order. Why should not the same method be resorted to when degree of excellence in handwriting, degree of eminence of scientific men, or any other 'subjective' issue is involved? Groups of students acting in this way as judges do actually agree with one another exceedingly well if the groups of judges are large enough. Scales for the measurement of handwriting have recently been made up, and even for English composition."

The author will quote two experiments in handwriting in which many judges participated, with averages determining the rank. The first states: "Dr. E. L. Thorndike has published a scale for the measurement of the quality of handwriting of children and also one for handwriting of women. . . . Many samples both of children's handwriting and of adults were secured and these were judged separately by many competent individuals. From these scores thus obtained the relative values of the samples were determined and the scales formed."[3] The second quotation is the following: "The specimens were divided into four piles according to general merit, and three hundred were then selected at random, about the same number being taken from each pile. The twenty-five judges arranged them in eight piles on the basis of equal intervals of merit. . . . On the basis of the average rank assigned each specimen, the best and the poorest were selected as the top and bottom of the scale. Therefrom the exact numerical rank which the other six samples should have was determined."[4]

An investigation by Soderquist on the validity of measurement of social traits of high school pupils by the method of rating by associates showed that "the data of this study indicate definitely that, under normal conditions of acquaintance, the rating-by-associates method yields estimates in sociability of a uniformly high level of reliability on all grade levels in the junior-senior high school."[5]

Since the literature afforded many other examples of rating by the use of many judges and the use of averages to determine the rank or position, it was decided to employ that technique in this study. The students were given the list of the one hundred and twenty-one names of the students making up the classes in General Psychology and in Introductory Sociology. These names were arranged in alphabetical order and were printed on ditto paper. Accompanying the list of names were the following instructions:

> "Rank the following students according to their social proficiency. Place a figure one (1) before the name of the person in this list to whom you would give the highest rating, a figure two (2) before the name of the person to whom you would give the second rating, and so on down the list for all of those that you know well enough to rate."

Since the author was very desirous that the rating be done accurately, he suggested a technique whereby students would be comparing only two subjects at a time, irrespective of how many subjects were being rated. It was suggested that a student go through the list and check the names of those that he felt qualified to rate. To make it simple, suppose the student knew just five subjects: Smith, Black, White, Brown, and Jones. The first two names on the list are Smith and

[1] Floyd L. Ruch, *Psychology and Life*, p. 86. Chicago: Scott, Foresman & Company, 1937. Pp. xiv + 678.

[2] Gardner Murphy, *An Briefer General Psychology*, p. 223. New York: Harper and Brothers, 1935. Pp. xviii + 572.

[3] Milo B. Hillegas, "Scale for the Measurement of Quality in English composition by Young People," Teachers College Record XIII (Sept. 1912), 1–54.

[4] Eugene A. Nifenecker, "Grade Norms for the New York City Penmanship Scale," *Journal of Education Research*, II (1920), 817.

[5] H. O. Soderquist, "Validity of the Measurement of Social Traits of High School Pupils by the Method of Rating by Associates," *Journal of Educational Research*, XXXI (September, 1937), pp. 29–44.

Black. He could then determine which of these two had the greater social proficiency, Smith or Black. If Smith were the better, he would be checked as number one; and Black would be number two. Then Smith, rated as number one, would be compared with the next name which was White. Smith still might be adjudged first so that White would then be compared with Black. If White had a greater degree of social proficiency than Black, then White would take Black's place as number two and Black would become number three. The next name on the list is Brown. Brown would be compared with number one, which is Smith. Suppose Brown is better than Smith. Brown then would become number one and each of the others would be automatically lowered one point. The last name on the list is Jones. Suppose Jones has the smallest amount of social proficiency. He would be compared first with Brown, who was number one, and then with Smith who was number two, and so forth. If there were no others that he would be adjudged to surpass in social proficiency, he would automatically be the last. The merit of this type of rating is that the judge is comparing only two people at a time and hence would be in a position to make a careful estimate.

The author thinks that the majority of judges employed the technique discussed above in making their ratings, but there was no requirement that they do so. The judges were also familiar with the type of rating in which the best is selected, then the worst, then the next to best, then the next to worst, and so forth until the entire group is rated.

After the ratings had been made, the average for each individual was compiled, and the subjects were ranked in order according to their average scores. From this kind of ranking an upper group of forty, a middle group of forty-one, and a lower group of forty was formed. It was decided to use these groups as the criterion against which test scores would be correlated to determine the validity of the second test.

With a criterion selected, the next step was to prepare a test to give to the one hundred and twenty-one subjects. It was decided to use again a social situations test, similar to the one used in the preliminary Wisconsin study. As a means of collecting social situations, the La Crosse students were given the same assignment that had been made to the Wisconsin students in the previous study. The instructions were as follows:

> "Write five situations that you have experienced or have known other students to have experienced during the past year. As nearly as possible select those situations in which you are uncertain as to the correct behavior to employ, or those in which it is important for an individual to react properly to gain group approval. In each case discuss each situation in enough detail so that the reader may know what was actually involved in the situation, as well as what was done, and what you think should have been done."

From the situations which the students turned in to him, the writer employed the same technique as in the Wisconsin study of reducing the situations to two or three sentences in length but retaining the substance of the situation in each case. The La Crosse situations were then printed on ditto paper. There was enough space after each situation for a student to record what he would do or say under the circumstances of the particular situation. These data were then turned in to the writer, after which the writer prepared sixty multiple-choice test questions. To these sixty test questions were added sixty test questions which had been collected at Madison, but which had not been used in the preliminary Wisconsin study. This made a total of one hundred and twenty test items. These were administered to the one hundred and twenty-one subjects at La Crosse.

The item validation was carried on as in the first study. Every alternative was tried out on the Votaw curve. Any item that had one or more alternatives that differentiated by a critical ratio of two or more between the upper and lower group was considered to be a good test question. Eighty-five items survived this technique.

The contingency coefficient of validity for this test of eighty-five situations was .75, and the product-moment correlation was .86. The reliability coefficient stepped up by the Spearman–Brown formula was .86. Since the students at the Wisconsin State Teachers College at La Crosse are a very homogeneous group, the author considers this a good reliability.

Table V shows the means, standard deviations, and critical ratios for the three groups.

TABLE V

INTERCORRELATIONS AMONG MEN AND WOMEN STUDENTS FOR GROUP I, GROUP II, GROUP III, AND THE TOTAL GROUP SECURED FROM THE SECOND SOCIAL SITUATIONS TEST ADMINISTERED TO ONE HUNDRED AND TWENTY-ONE SUBJECTS

	N	M	σ	σ_M	σ_σ	Diff. M's.	Diff. σ's	σ diff. M's.	σ diff. σ's	C.R. diff. M's.	C.R. diff. σ's
Group I											
Women	27	454.82	18.19	3.5	2.5						
Men	13	425.31	27.53	7.6	5.4	29.51	—9.34	8.4	5.9	3.6	—1.5
Group II											
Women	16	403.38	18.45	4.6	3.3						
Men	25	387.00	22.27	4.4	3.1	16.38	—6.82	6.4	4.5	2.5	—1.5
Group III											
Women	9	350.56	31.31	10.1	7.4						
Men	31	329.77	28.43	5.0	3.6	20.79	2.88	11.3	8.2	1.8	.3
Total Group											
Women	52	420.94	44.65	6.1	4.4						
Men	69	368.51	45.70	5.5	3.9	52.43	—1.05	8.2	5.9	6.4	.2

as well as for the entire group, on these eighty-five items.

In every group and for the total group, the scores of the women were much higher than those of the men. The critical ratios in favor of the women ran from 1.8 for the lowest group to 6.4 for the entire group, thus showing that these differences in means are practically certain to be true differences.

The highest critical ratios are 1.5; this does not show any certainty of more variability in any group than in any of the others, although there is some indication that the men tend toward a greater variability.

Any conclusions that may be drawn from the statistical analysis bear out those of the preliminary Wisconsin study.

CHAPTER VI

FINAL WISCONSIN STUDY

The author had recognized throughout the previous studies that social proficiency was a very elusive subject. If social proficiency is considered to be the way in which the individual handles his social relationships with others, his effectiveness in social situation, and his social stimulus value, high or low degrees of social proficiency in others would probably be judged differently by the different individuals who contact these other people. If a group is heterogeneous enough to be divided into an upper group, a middle group, and a lower group as regards degrees of social proficiency, then this same total group should be heterogeneous enough to act as judges of their associates, using their own particular criteria of social proficiency as their guides. Thus by the definition of social proficiency itself, this technique seemed to be most valid. This technique also seemed necessary since it was questionable to the author whether any one knew just what were the traits that entered into the generalized trait of social proficiency owing to the fact that we are living in a period of great change in the moral norms and other social standards or norms.

The laboratory sections in Social Development and Education consisting of University of Wisconsin juniors and seniors afforded an available group for this experiment. These laboratory groups were different groups from the ones which the author had used in the preliminary Wisconsin study. There were no individuals in this study who had participated in either of the writer's previous studies.

The names of the individuals enrolled in these two laboratory groups were arranged in alphabetical order on a mimeographed sheet. The following instructions accompanied the list of names:

> "Below is a list of all members of the laboratory sections in Education 112. Read through the list carefully and pick out those members which you know intimately and check their names. Of those which you have checked make a ranking as to your opinion of their relative social proficiency. If you know but one person intimately, rank him as number one."

There were no comments as to methods of rating, cautions to be observed in rating, or criteria to be used; in fact, there was no dis-

cussion in regard to this assignment whatever. Whatever factors that might be due to the "halo effect," prejudice, indifference, socio-economic status, and so forth were left entirely uncontrolled. After the rankings had been made, averages were made from the ranking of all students who had been rated by three or more judges. From these averages, the group was subdivided into three sub-groups. With this division as the basis, the seventy-two items of the first test and the eighty-five items of the second test were administered to the members of these laboratory groups. The Votaw curve technique was employed as before. Fifty-two items survived. These the writer considered to have met a rigorous test of validity. These items were already good problems, having passed previously well controlled experiments, but with the additional test they should form still sharper instruments for the measurement of social proficiency. The final test is shown in Appendix II.

The contingency coefficient of validity for this new test was found to be .78. This the writer considered acceptable, since a 3x10 classification for the mean square contingency could never reach more than approximately .90. The product-moment validity coefficient was .92. Had a criterion group composed of a more heterogeneous selection of subjects been used, it could reasonably be expected that a higher validity could have been obtained.

The Spearman–Brown reliability coefficient was .82, which the author considers adequate for a group test, and which is high for such a homogeneous group of juniors and seniors. Also, since only fifty-seven of the subjects completed both sections of this test, it could reasonably be expected that the reliability would increase with greater numbers participating.

The scores of this test of fifty-two items were then correlated with the scores of the American Council Psychological Examination (percentile ranks), the Sims Score Card for Socio-Economic Status, the Washburne Social Adjustment Inventory, the George Washington Social Intelligence Test, and the Hartmann Test of Social Attitudes.

The means, standard deviations, coefficients of correlation, and the probable errors of the coefficients of correlation for these comparisons are shown in Table VI.

It will be noted that these coefficients of correlation are about as close to zero as it is possible to get them, since the probable errors are so large. It can again be concluded, as it was concluded in the preliminary Wis-

TABLE VI

CORRELATIONS BETWEEN THE FINAL SOCIAL SITUATIONS TEST AND FIVE OTHER TESTS

(A) Social Situations Test and American Council Psychological Examination (Percentile Ranks)

Tests	N	M	σ	r	SEr	PEr
Social Situations	22	200.64	17.17			
American Council	22	56.55	21.70	.17	.21	.14

(B) Social Situations Test and the Sims Test for Socio-Economic Status

Tests	N	M	σ	r	SEr	PEr
Social Situations	57	206.37	18.56			
Sims	57	24.75	5.10	—.02	.13	.09

(C) Social Situations Test and the Washburne Social Adjustment Inventory

Tests	N	M	σ	r	SEr	PEr
Social Situations	55	205.53	17.80			
Washburne	55	376.33	37.23	.12	.13	.09

(D) Social Situations Test and the George Washington Social Intelligence Test

Tests	N	M	σ	r	SEr	PEr
Social Situations	55	206.65	18.70			
Social Intelligence	55	139.53	7.63	.13	.13	.09

(E) Social Situations Test and the Hartmann Social Attitudes Test

Tests	N	M	σ	r	SEr	PEr
Social Situations	56	206.30	18.90			
Hartmann	56	71.90	15.46	.01	.13	.09

consin study, that the social situations test does not measure the same traits that these other tests do.

Since the item analysis of the first Wisconsin study showed so little, it was decided that such an analysis would not be made for this final study.

General conclusions that may be drawn from the statistical analysis of this study are the following:

1. That women tend to make higher scores than do men, bearing out the conclusions of the first study.
2. That items survive regardless of the method of rating individuals.
3. That there is no similarity between scores on this test and intelligence.
4. That there is little if any similarity between the social situations test and three other tests purporting to measure phases of personality.

There also seem to be a few significant conclusions that may be drawn from an analysis of the specific responses. The thread that extends through the entire test seems to be a consideration of others. Question 21 shows a respect for ideas or opinions of others, as an individual opposing the tenets of a certain church is willing to admit that he may not be fully informed when it is revealed that one of the guests is a member of that church. Question 26 shows that a member of the upper group tends to avoid putting others in an embarrassing situation when he is willing to take a chance on the wallflowers at a no-date dance. Questions 22 and 27 show respect for others' tastes. In question 22, after a borrower has lost a pair of gloves, she is desirous that a girl pick out another pair at the borrower's expense. In question 27, a member of the upper group will find some complimentary remark to make over a new dress that the owner likes very much. Question 2 shows an ability to overlook social errors in others in the face of embarrassing circumstances. This is revealed by the fact that a girl did not reply until the last minute to an invitation that was given weeks in advance, which left the one making the invitation in an embarrassing position since he had invited another to the affair. The upper group was still willing to make an adjustment in order to save the feelings of all concerned. Question 51 shows that a member of the upper group tends to consider an obligation to her hostess as more important than her own desires. Question 18 shows an effort to save the feelings of others even though a slight deviation from the truth is employed. Question 52 indicates a desire not to intrude upon the personal affairs of others, as members of the upper group tend to move out of hearing distance from a private discussion. Question 28 reveals a consideration for the financial status of a friend and also a desire not to lose a friend, as the upper group tends to refrain from putting pressure upon a financially embarrassed borrower. Question 48 reveals an attempt to make a guest feel at ease and likewise save her feelings even when a guest deviates from what is customary at a tea. Appreciation of another's effort to be considerate is indicated in question 9, as members of the upper group will respond to this type of courtesy even though financially they be disinclined to do so.

The specific responses, however, indicate that even though the upper group tends to be very considerate of others, they do not practice this principle to the extent that they lower their standards or ideals. The maxim of "when in Rome do as Romans do" is true only within the range of one's ideas of right and wrong as expressed in his own individuality. In other words, members of the upper group tend to demand their rights, although not forgetting that rights also imply duties. For example, question 5 shows that the upper group tends to believe that friendship is a reciprocal affair, because when a room-mate objected to smoking, there was an effort to do the smoking in a way considerate to the room-mate but no indication that the smoker should change rooms or stop smoking. Question 6 is a case of a man insisting that his fiancée dress differently, but the fiancée continues to dress as before but still shows some consideration for him in trying to change his viewpoint. Question 14 is a case of a student who wants to study although a friend is trying to interfere. In this case, the upper group believe it is legitimate to tell the friend to stop and close the door on the way out. Question 17 shows no temptation of a non-smoker to smoke when cigarettes are offered, and question 25 shows the refusal of a non-smoker to smoke when the group criticizes her for not doing so. Question 19 shows a girl who does not hesitate to refuse

the lending of her clothes to another, being careful, however, to save the face of the one who made the request. Question 32 is a case in which the upper group is not going to be changed by adverse criticism. One is accused of "apple-polishing" because he wants to do more than the required amount of practicing in a physical education course, but he does not stop, although he shows consideration for the other boys when he asks them to practice with him. Question 38 is a case of a girl listening to a speaker whom she wants to hear, but being annoyed by a friend who is talking. She does not hestitate to ask the friend to talk later. Question 42 shows that one is willing to be considerate to a clerk in a store but is not willing to be subjected to high-pressure salesmanship.

There are a few instances of this desire to demand his rights that cause a member of the upper group to correct the faults of others, gently but firmly. There is in these situations, too, an effort to show consideration for others even though not always to the individual being corrected. In question 4, when one boy in a group yelled at an old man crossing the street and asking him why he did not get crutches, the upper group felt that this boy should be told to "pipe down." Question 35 is a case of some small boys squirting water on some girls. It was within the rights of the upper group to talk to the boys showing them, if possible, wherein the boys were doing wrong.

Whereas consideration for others will cause the upper group to deviate from the truth where the truth will cause pain to others or avoid an unpleasant situation, nevertheless, the upper group tends to be generally straightforward, frank, and honest in terms of standards and ideals above the average. Question 30 is a case of a boy finding it impossible to fulfill a dinner date with a girl since he had spent more money than he had originally anticipated. He was considerate and honest with the girl by explaining the situation and letting the decision rest with her. Question 34 indicates that the upper group feels that denting a fender of a parked car is sufficient reason to make retribution to the owner even if an unpleasant situation may be avoided by driving on. Question 40 indicates a willingness to pay for damages resulting from the activities of one's dog. Question 44 reveals honesty in making arrangements for paying for drinks when the purchaser had insufficient money to pay for these drinks after they had been served.

Consideration for others is also emphasized by upper group members in making the best of unpleasant situations. Question 2 is a case of a boy inviting an out-of-town girl to a dance weeks in advance. She did not reply, and the boy got another date. The out-of-town girl wired the boy just the day before the dance that she was coming. The upper group made the best of this situation by arranging a date for both girls. Question 3 is a case of a girl who finds herself with two dates overlapping. Being as casual as possible seems to be the best reaction here. Question 7 shows a man who is being specially treated to a family's favorite dish. It turns out to be something that he particularly dislikes. He is considerate by eating some of it, but attempts to draw attention away from it by discussing something of interest to the family. In question 8 there is a guest who breaks a vase. Of course it cannot be replaced nor can something else be substituted for it, since there is sentiment attached to the vase. The upper group feels that it is best to get it cemented together. In question 18 a girl is caught in a lie. She is able to save another's feelings as well as her own by an excuse. The upper group feels that this is legitimate conduct in such an awkward situation. In question 47, a professor introduced a girl as a relative of one of the other professors. The statement is incorrect. The upper group felt that this should not be ignored but they favored the simpler method of correcting the misstatement by merely saying they were not related, rather than telling the professor who made the introduction that he was mistaken and thereby necessitating the professor's making the correction.

Generally speaking, those items in a question that indicated a running away from or avoiding an unpleasant situation were items that did not differentiate between the lower and upper groups. If, however, meeting the situation would cause pain or embarrassment to others, the upper group seemed to feel that consideration of others was sufficient to avoid an unpleasant situation if possible. In question 33, a young man has difficulty in dancing with a girl, part of the trouble at least being because the girl cannot dance well. Trying a simpler step was adjudged to be the

best alternative on the part of the upper group, but a retreat through suggesting having a drink or sitting out the rest of the dance would involve lack of consideration and was not acceptable to the upper group. In question 39, an unpleasant situation is avoided when one appears not to have overheard derogatory remarks made about him by others. In question 42, the individual avoids an unpleasant situation by leaving a store when high pressure salesmanship was employed, although making a courteous remark to the saleslady at the time of departure. Question 43 is a case of a woman who forgot a bridge party. The best she can do is to offer an acceptable excuse. In question 49, a car containing two couples has been forced into a ditch by another whose occupants are drunk. One of the intoxicated individuals is very quarrelsome. While help is being secured, the upper group feels that it is better to take the girls a short distance from the quarrelsome drunk individual than it would be to threaten or to hit him.

Not only does it seem to be desirable to be considerate of others in a positive way, but also to have enough emotional maturity to withstand good humor. By this is meant good sportsmanship. In question 1, a girl is teased for "apple-polishing" when she is really interested in her subjects. She submits to the teasing, but maintains her standards by continuing talking to her professors after class. In question 20, a girl has accepted an office in an organization. She loses interest but does the best she can. In question 36, cheer leaders are being selected. A prominent student tries out. He is greeted by cat-calls and hoots. Making a joke of it seemed to be the best answer in this situation. Question 37 shows a boy trying out for basketball. The season is almost half over and it is questionable whether he will earn a letter. "Stick it out" is the verdict of the upper group, however. Question 46 concerns two individuals who are going duck hunting. It was doubtful as to who had killed one of the ducks. The upper group indicated good sportsmanship by its decision to let the duck go to the hunter with the smaller bag at the end of the day. It is likewise good sportsmanship in question 26 when the individual at a no-date dance takes a chance on the wallflowers.

There were only two questions which could be answered by knowing the rules of etiquette. Question 15 shows two couples dining at a restaurant. The upper group, according to accepted terms of etiquette, rightly suggested that the girls should give the orders to the boys. However, some members of the upper group felt that a consideration of the financial status of the boys showed more social proficiency than did rules of etiquette, since these few thought the girls should have asked the boys what they were having. Question 16 shows two boys in a restaurant wanting a second cup of coffee. The upper group followed accepted social usage here when it implied that "catching the eye" of the waitress was the best alternative. Whereas rules of etiquette are to be adhered to within limits, consideration for other's lack of social knowledge is implied in question 48. In this latter question a girl was asked whether she wished lemon or cream in her tea. The girl asked for both and in an attempt to spare her feelings both were given her.

In general an analysis of the specific responses made by the upper group indicates that consideration of others is the prime virtue of social proficiency. This does not mean being submissive, however, for the upper group tends to keep its standards and ideals, but it is considerate within the range of these standards and ideals. To be frank, straightforward, and candid is desirable but may be somewhat deviated from in those cases where the truth will cause pain or the untruth avoid unpleasant circumstances for others. The upper group tends to smooth over an unpleasant situation, saving the feelings of others as well as its own. The upper group will even retreat or avoid unpleasant situations where consideration for others seems desirable, but this only when its ideals and standards do not have to be violated. The upper group places a great deal of emphasis upon good sportsmanship, and, finally, it supports harmonious relations with others within the conventions of society.

Any more detailed analysis of these questions would tend to over-simplify and distort the facts. When the three studies are considered collectively, there were very few alternatives which all members of either the upper or lower group answered favorably or unfavorably. Likewise there was no individual returning a perfect paper in terms of the best answers for the questions as determined by their discrimination values. The

same general principle of consideration apparently runs through the entire test. The differences in responses of the upper group, then, must be, not a difference in the principle employed, but a difference in its application. This is what one would expect since each individual brings to each situation his whole background of experience, including besides principles, his knowledges, skills, judgments, habits, abilities, as well as degrees of emotional, physical and intellectual maturity. It is, in the last analysis, the sum total of all these factors working together that determines an individual's reaction in a given situation. The alternatives in each of the questions, however, draws upon the individual's principles, working within the boundaries of the rest of his personality. Hence the writer feels that his test is a measure of social proficiency.

The analysis of the specific responses to the test items does not reveal any conflict with the writer's classification of social proficiency as revealed by the experimental literature. The reader may note that in consideration for others, the enhancement of the ego was an attendant factor in most cases. Taking people as they are was revealed in all situations involving good sportsmanship and unpleasant situations. Making a good personal appearance was shown as a secondary factor in most of the situations involving consideration for others. Good manners was the theme in questions 15 and 16. A normal functional intelligence was shown in all questions involving a difficult situation, and normal emotional maturity was the important factor involved in those situations calling for good sportsmanship. Finally, a good character without reform tendencies or holiness is revealed since the upper group protected their standards and ideals, but at the same time felt free to deviate somewhat from the truth if the occasion seemed to demand it.

The writer concludes that there is one general principle of social proficiency which may be summarized in the one phrase: consideration for others. The writer also believes that this final Wisconsin study has borne out the statement of social proficiency that was derived in the first Wisconsin study, namely, that social proficiency is the way in which the individual handles his social relationships, or the effectiveness of the individual in social situations.

CHAPTER VII

CONCLUSION

With the detailed analysis completed, it seems desirable to take inventory of what was done so that the complete study may be seen in perspective and its legitimate conclusions summarized.

A canvass of the various measuring devices in the field of personality seemed to the writer to show an absence of testing devices for measuring the social effectiveness or social proficiency of the individual. There were tests such as the Washburne Social Adjustment Inventory, which aimed to measure one's adjustment to conditions of life; the George Washington Social Intelligence Test, which aimed to measure one's ability to work with others; the Sims Score Cards for Socio-Economic Status; the Strong Interest Blank; and the Bernreuter Personality Inventory, which purported to measure various phases of personality, as well as numerous other tests aiming to measure certain phases of personality. In the entire literature, however, there did not seem to be any test that had for its purpose the measurement of social proficiency, namely, the way the individual handles his social relationships or his effectiveness in various social situations. To find such a measuring instrument was the writer's point of departure in this project.

A survey of the experimental literature seemed to indicate that one's consideration for the feelings of others was the prime factor in social proficiency, with the inflation of the ego of others a second important factor. Still using the experimental literature as a guide, it was found that these factors could further be subdivided loosely into the following: taking people as they are, being adaptable in social situations, making good personal appearance through dress, personal habits, and so forth, displaying good manners, having a normal functional intelligence, having a normal degree of emotional maturity, being able to lead if necessary or demanded, possessing a high character without reform tendencies or holiness, and having similarities to others including socio-economic status. With this as a guide, four categories of social proficiency were derived. One hundred and thirty-nine students at the University of Wisconsin were rated for their social proficiencies. Since the lowest group had

only three members, these were placed with group three. All test questions which showed a significant discrimination between an upper and lower group were adjudged to be good questions. This resulted in a multiple-choice situations test of seventy-two questions. This test was also given to one hundred and eighty summer school students so that comparisons could be made between graduate and undergraduate students. This study is discussed in detail in Chapter IV.

It was then decided to determine whether students could rate themselves with merely a statement of social proficiency as being one's effectiveness in social situations. One hundred and twenty-one students at the Wisconsin State Teachers College at La Crosse were used in this study. After the subjects had been rated by their associates, they were divided into upper, middle, and lower groups based on the averages of ratings. All questions which showed a significant difference in responses between the upper and lower group were saved. This resulted in a test of eighty-five questions. This study is discussed in detail in Chapter V.

There was still some question as to whether students could rate themselves for social proficiency without a descriptive category or explanation of social proficiency as a guide. Since social proficiency by definition is one's effectiveness in social situations, it was thought that if students could properly rate each other at all, they should be able to rate social proficiency without any instructions whatever. Fifty-seven students at the University of Wisconsin participated in this study. They were also divided into upper, middle, and lower groups. The test of seventy-two questions from the first study and the test of eighty-five questions from the second study were administered to these subjects. By using the same technique for selecting questions as was used in the previous study, fifty-two questions were saved. These questions comprise the final test. This study is discussed in detail in Chapter VI.

Comparisons with other personality tests and with intelligence were made in both the first study and the last.

General statistical conclusions that may be drawn from this project are the following:

1. The writer's test of social proficiency measures some aptitude not measured by the George Washington Social Intelligence Test, the Washburne Social Adjustment Inventory, the Sims Score Card for Socio-Economic Status, the Hartmann Social Attitudes Test, and the American Council Psychological Examination.
2. The writer's test does differentiate between the several groups as judged by the criteria selected from the literature and criteria selected by student ratings with and without discussion of social proficiency.
3. The writer's test indicates that social proficiency increases with maturity.
4. The writer's test indicates that females are better adapted socially than the males of like age.
5. There are no significant differences between males and females or between graduates and undergraduates; this indicates that one group is not any more variable than another.
6. There is no consistency in the manner in which any one item differentiates between males and females or between graduates and undergraduates.
7. There is no consistency in the variability of males and females or of graduates and undergraduates for any item.

As discussed in detail in Chapter VI, a few conclusions may be drawn from the responses to specific items. In general, consideration of others seems to be the prize virtue of social proficiency. The upper group, however, apparently believes that consideration for others is reciprocal, since it feels no hesitancy in demanding its own rights, although at the same time being cognizant that where there are rights there are also duties or obligations to others. The upper group is for the most part frank, straightforward, truthful, and honest; but at the same time, does not hestitate to deviate from the truth or avoid an unpleasant situation if the telling of the truth or meeting of the situation directly will cause pain or embarrassment to others. However, any deviation from frankness or the truth must not be great enough to violate the standards or ideals of the individual. The upper group displays a high degree of functional intelligence or common sense in its ability to conduct itself smoothly and tactfully in difficult situations. Good sportsmanship, shown mostly by a normal emotional

maturity and a willingness to submit to good humor, is a definite characteristic of the most socially proficient. The upper group is cognizant of the conventions of society, but has a functional type of good manners rather than a complete compliance to rules of etiquette.

Consideration for others seems to be the foundation of social proficiency. Its application varies somewhat from individual to individual. This is illustrated by the fact that when one considers the three studies as a whole, there were few alternatives which all members of an upper group selected. This is what one would expect, since each individual brings to every situation his whole background of experience, including his guiding principles, knowledges, habits, skills, abilities, as well as his degree of emotional, physical, and intellectual maturity. It is the sum of all these factors working together that determines an individual's reaction in a given situation. It is this that the writer has measured as revealed by the statistical interpretation previously discussed.

In brief, social proficiency may be defined as the way the individual handles his relationships with others, or, his effectiveness in social situations. The principle of social proficiency may be reduced to one phrase: consideration for others.

APPENDIX I

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APPENDIX II

Facsimile of the Final Test of Social Proficiency

Directions: After each of the following situations, there are four alternative responses. Each choice that appears in this questionnaire was the actual response given by one or more college students. The purpose of this questionnaire is to collect information relative to social practices.

Place a cross (X) in front of the alternative that you consider most similar to what you would do in the same situation. *Remember it is what you can and would do in each particular situation, not what you wish you could do.* For example, your financial status might make it impossible for you to do certain things. Any actual barrier to a response is to be taken into account, and *you are to mark the one nearest to what you would do.*

Answer statements that apply to the opposite sex in the same manner as if you were a member of the opposite sex.

There are no right or wrong answers. The aim of the questionnaire is to obtain a status view (i.e., how things actually are) of social practices in this field.

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1. A very brilliant girl used to stop after class and talk to her professors. She was sincerely interested in talking to them and was not merely trying to work up a good grade. Her friends, however, teased her a great deal about her "apple polishing." What will the girl do?

——Discontinue seeing them after class and go to their offices instead.
——Just laugh it off with her friends, take the kidding, and continue the practice of talking to her professors after class.
——Tell her friends to go jump in the lake, and ignore the comments.
——Discontinue her conversations with the professors.

2. A boy asked an out-of-town girl to come for a week-end to Madison. He wrote some four weeks in advance. He does not hear from the girl, and in the meantime, he meets another girl at the university whom he likes very much. He asks her for a date for the same affair to which he had invited the first girl. On the Friday of the week-end involved, he received a telegram from the out-of-town girl saying she would be there and for him to meet such and such a train. What will the boy do?

——Wire the out-of-town girl to stay home as he had made another date as she had not replied to his invitation before.
——Get the out-of-town girl another date for that evening.
——Break the date with the Madison girl, but offer to get her another date for the affair.
——Take the Madison girl to the affair, but entertain the other girl the rest of the week-end.

3. A girl has a date for dinner with a boy, but has to be home by nine as she has another date then. She does not want to tell her friend of the second date, and so she tells him she has to be home to study. Unfortunately, she and her escort arrive at her home a little late and her nine o'clock date

is a little early so that the two boys meet. What will the girl do?

——Pretend the second boy just dropped in and act surprised to see him.
——Introduce the two boys and act as casual as possible about the whole thing.
——Admit to the first boy, when she says good-night to him, that she was caught in a lie.
——Tell the first boy that she and the second boy are going to study.

4. A bunch of boys and girls are out for a ride. While going down a street they saw an old man slowly crossing the street. One of the boys yelled at him: "Why don't you get crutches?" What will one do?

——Tell the boy to "smarten" up.
——Tell the boy to "pipe down."
——Show disapproval by silence or aloofness during the rest of the ride.
——Tell the boy, "Your time is coming pal!"

5. Mary had a roommate whom she had not previously known. This girl was a heavy smoker much to Mary's annoyance. She finally told the girl that she did not like smoke in her room. What will the roommate do?

——Apologize and say she will try to cut down on her smoking.
——Find a new room or roommate.
——Stop smoking in her room, and smoke only in the smoking-room or parlor.
——Continue smoking and tell Mary it is as much her room as Mary's.

6. A girl has become engaged to a fellow who wishes her to change in many respects. He wants her not to go in swimming, to wear more conservative clothes, and to use no make-up. What will the girl do?

——Call off the engagement as there is war ahead.
——Do as he wishes, hoping to change his ideas gradually.
——Continue to dress, etc., as she is accustomed to, but try to change his viewpoint.
——Refuse to change, telling the boy there are some things she prefers to do her own way.

7. A boy is invited out to dinner in a private home. Just before dinner, the family had talked most enthusiastically about the particular dish that the mother was serving that day. When dinner was served, the boy discovered that the much touted dish contained several ingredients which he violently disliked. What will the boy do?

——Eat it if it kills him and praise it to the skies.
——Eat what he can and say nothing unless they ask him; if, so, say it is delicious.
——Explain his dislikes or say he is allergic to it, and apologize for not being able to eat it.
——Eat some of it, and try to draw attention away from it by discussing some subject that the family is interested in.

8. A girl had a vase which she prized highly both as an antique and for certain sentimental associations with it. She had just finished showing it to a young man and telling him about it, when he accidentally bumped it, and it fell to the floor and broke. What will the fellow do?

——Apologize and buy her another vase similar in appearance.
——Blush and stutter some excuse, such as "Gosh—I'm sorry!"
——Send her a small gift with a note of regret about the vase.
——Tell her how sorry he is and ask if there is any place he can take it to be cemented together again.

9. A student who is careful and orderly with his expenditures has a friend who likes to eat at any time of the day and invites anyone he is with to join him. The student disapproves of his friend's practice both from financial and hygienic angles, yet he does not want to seem unfriendly. What will he do?

——Tell the friend he is not hungry but thanks anyway; he perhaps suggests that they can have lunch together.
——Tell friend it is not a good idea to eat so often and besides he cannot afford it.
——Go occasionally and order just a coke or something inexpensive.
——Accompany him but just sit while he eats.

10. A group of university girls, having nothing else to do, decided to play bridge, have a few drinks (alcoholic) and a few smokes. After things were well under way, Mary called. Mary was a close friend of

them all, but did not indulge in alcoholic drinks or smoking. What will the others do?

——Invite her to come and talk to them.
——Get her some other kind of a drink.
——Ask Mary to play; take turns being the extra person.
——Offer her a drink and let her refuse it.

11. A girl became affiliated with a professional fraternity. This organization has rewarded her in the past for her scholastic achievements and the girl feels obligated to the group. However, she finds that in the choosing of members, other criteria are set up besides scholarship and personality, mainly racial prejudice. She is violently opposed to this and has protested to no avail. What will she do?

——Keep on protesting, hoping for results eventually.
——Resign from the organization.
——Become a less active member in all other of the fraternity functions.
——Accept majority vote and drop the matter.

12. Two students are suspected of breaking a rather serious rule of the university; they are actually guilty. Evidence is quite strong against them. When questioned together both deny it. Later, evidence is presented to one and he confesses. When the evidence is presented to the other, he is told that his friend has already confessed. What will the second student do?

——"I won't talk until I see my friend."
——Confess also.
——Keep silent; refuse to say anything.
——Confess, but criticize friend for telling. Try to put the main blame on him for tattling.

13. A boy is at a banquet and is unexpectedly called upon by the toastmaster for a short speech. The boy is totally unprepared. What will he do?

——Explain that he was unprepared and would have to be excused.
——Say a few words and sit down.
——Make an effort to make some appropriate remarks; keep his poise.
——Get up and tell a joke or witty story.

14. A student is trying to study when one of the boys in his house keeps jabbing him in the ribs. It is all done in a playful spirit. What will the student do?

——Tell him in a friendly way he had to study, so lay off and shut the door on the way out.
——Tell him to stop, in an angry or hard manner.
——Leave the room for a short time, hoping he will be gone when he returns.
——Jokingly tell him to quit, and if he did not, playfully sock him or throw him out bodily.

15. Two couples are out to dinner together at a restaurant. They have each consulted the menu, and the waiter is waiting for the orders. What will the girls do?

——Wait for the boys to suggest choices on the menu.
——Give orders to the waiter.
——Give orders to the boys.
——Ask the boys what they are having.

16. Two boys are eating in a restaurant. They want another cup of coffee, but none of the waitresses have noticed it nor asked if they wanted anything else, and all are busy with other orders. What will the boys do?

——Whistel or bang on the table to get service.
——Try to catch the eye of a waitress as soon as possible, but do not make any noticeable move otherwise.
——Go without a second cup.
——Demand attention, such as calling "Yoo-hoo," "Hey," etc., and ask for more coffee when the waitress comes to the table.

17. Four couples are on their way to a dance in one car. Cigarettes are passed. One of the girls does not enjoy smoking, although all the others do. What will this girl do?

——Refuse politely and say, "I don't smoke."
——Accept a cigarette and take an occasional puff.
——"No, thank you," and let it go at that.
——"Not right now, thank you."

18. A boy called and asked a girl for a date. She refused saying she was going home that week-end. A little later another boy calls and she accepts a date with him. They go to a movie and the first boy sees her there although she is unaware of it. He asks her

in class next day if she had a good time at home and she said she did. He then says he saw her at the movies last night. What will the girl do?

——Tell him she got back sooner than she expected to, or, that her plans were changed at the last minute, or some such excuse.
——"Well, you caught me—I'm sorry."
——"Oh, did you?" and laugh and let it go at that.
——Deny it and say he must have seen someone else.

19. A student does not like to wear other people's clothes and she does not like to lend hers either. One day a friend asked her what coat she was wearing and then asked to wear the other one. She did not particularly mind letting this girl have it, but she did not want it to become a habit. What will she do?

——Lend her the coat, but say she does not make a habit of lending her things but but is making an exception this time.
——Tell her the garment is being repaired or cleaned.
——Lend it to her without explaining her views on such practices.
——Tell her that she would not mind lending it to her, but if she did, she might have others ask to borrow her things, and therefore, she would prefer not to lend it.

20. Jane accepts an office in a campus organization at a time when she is very much interested in the activity. Later on, she becomes much less enthusiastic about it, and it is evident that her interest is lagging. What will Jane do?

——Resign the position, pleading too much school work or some such excuse.
——Keep the office and do her best at it; act interested at least.
——Keep the office because of its prestige value, but not let is absorb an undue amount of her time.
——Resign the position, admitting she had lost interest in the activity.

21. A group of friends are discussing religion in a general way. One of them remarked that he did not believe in the tenets of a certain church. After saying this, he realized that one of the persons present belonged to that church. What will he do?

——Let the statement stand as made, but drop the subject.
——Remark that of course he may not be fully informed.
——Say that he has respect for others' honest beliefs, but in this case he certainly does not subscribe to them.
——Apologize and change the subject.

22. A girl borrowed a pair of good gloves from her friend. She lost them, however. What will the borrower do?

——Find out what size she wore and buy another pair as near like them as possible.
——Take the girl down town to pick out another pair which the borrower will pay for.
——Apologize for the loss.
——Ask her how much they cost and reimburse her.

23. Riding in the Madison taxis of the 10¢ variety, one frequently encounters talkative drivers. Will one engage in conversation with them?

——Keep quiet and answer all questions by "Hm-m," "Yes," or "No."
——Talk to him as if you knew him, or give friendly responses.
——Be reserved, but respond courteously to his questions or comments.
——Answer curtly, and let him know you are definitely not interested in talking. Ask him to stop talking if he is persistent.

24. Two friends go to a double-feature movie. One of them is intensely bored with the second movie; his friend has not expressed his attitude. What will the bored person do?

——"Do you want to stay and see this film?" If the friend seems interested, stay and keep quiet. If not, they can leave.
——"This is a lousy show. Let's go."
——Sleep through the second film.
——Sit and suffer in silence until it is over.

25. Jane is in a group that is smoking. One of the boys urges her to have a cigarette as all the rest of the girls are smoking. When she refuses, he calls her a poor sport, and some of the girls look as if they are thinking she is a prude. However, she does not care to smoke. What will she do?

——"O.K. I still don't care to smoke."
——Offer some excuse: "I feel sick every time I do smoke, so I'd better not do it," or, "I don't care for the taste and see no reason to smoke just because others do."
——Say, "No, thank you, I care for none." Smile graciously and let them say or act as they will without further comment.
——Just laugh, and resolve to seek more congenial associates next time.

26. The scene is a no-date dance. There is a long stag line and a row of wallflowers. Jim was one of the fellows in the stag line. What will he do?

——Dance with one if he sees someone he'd like to dance with, or someone he knows.
——Take a chance on one of the wallflowers, and see if she is interesting.
——Dance only with girls he definitely wants to dance with, and not feel any duty toward the others.
——"Come on, boys. Let's give the girls a break."

27. A girl was putting on a new dress that she liked very much. The girls in the house were seeing it for the first time. None of them thought much of it. The girls are asked what they think of it. What will one say?

——Give her an honest and frank opinion.
——Say it is a nice color, has a good line, or fits well, or something of this sort of a complimentary nature.
——Do not comment at all; change the subject or make an excuse to leave before it becomes necessary to express an opinion.
——Make a complimentary remark about it, but also call attention to a defect in a friendly way.

28. Jim lent his friend five dollars near the end of the month. The friend promised to repay him as soon as he got his pay-check. By the time he gets the pay-check, he finds that he has more expenses to take care of than he had anticipated and it will require the most careful planning to save out the five dollars he owes. Therefore, he does not pay his debt immediately. Jim is not in immediate need of the money. What will Jim do?

——Ask the friend for it, but arrange for him to pay in installments.
——Say nothing at first, but wait a week or so to see what the boy will do. Ask him for it then, but let it slide for the time being when told of his friend's plight.
——Let it go till Jim actually needs it, and then insist on getting it.
——Ask for prompt payment because of the principle of the thing.

29. Jim was an expert ping-pong player, and he enjoyed keen competition. One day a friend invited him to play. Jim knew him to be a poor player. What will Jim do?

——Play with him, but not exhibit all his skill.
——Say he is busy, or has a class soon, or some such excuse for not playing.
——Accept and say, "If you don't mind being beaten a few times."
——Accept and try to aid him to improve his game; give him some pointers.

30. A boy made a Sunday night dinner date with a girl on the preceding Wednesday, but between then and Sunday, he spent more money than he thought he would, and found himself without enough money for the date as planned. What will he do?

——Call up the girl and say he cannot make it this Sunday, but how about next Sunday.
——Call the girl and change the date to something less expensive or to one that did not cost anything.
——Borrow from his roommate or someone.
——Explain the situation to the girl and let her decide what can be done.

31. A young woman from a Wisconsin city is coming to Madison for a week-end. She knows of a former teacher of her city who is now a graduate student at the university. She writes and asks if she may share her room for the week-end. The former teacher knows the young woman merely by name, and would find it somewhat inconvenient to take her in. What will the former teacher do?

——Tell her she is sorry, but she has other plans; tell her of rooming houses, etc., where she probably could stay.
——Permit her to share her room.
——Let the young woman come; give up her bed to her, and stay with a friend.
——Tell her she is sorry, but she does not have enough room.

32. A boy in a physical education class is not particularly proficient as yet, and he wants to improve. He has been staying on after class is over and practicing. He waits till the class has gone and the instructor has left, but still some of the boys have seen him around, and think he is "apple-polishing". The boys wants the practice, but he does not want his classmates to have an adverse opinion of him. What will he do?

——Continue his practicing and ignore their attitude.
——Tell them he is inferior at the sport, and he really wants to improve.
——Ask them to come along and practice with him.
——Practice less often.

33. A young man is dancing with a girl, and frequently steps on her toes. It does not appear to be his fault all the time. What will he do?

——Always assume the blame, and say "Excuse me," etc.
——Try a simpler step with her.
——Occasionally excuse himself, but ignore it part of the time, especially if it were conspicuously her fault.
——Suggest having a drink, or sitting out the rest of the dance.

34. While driving up State Street, a student accidentally dents the fender of a parked car. There is no one in it. What will he do?

——Keep on driving.
——Take down the license number and find out who owns it; notify the owner of the car of the accident.
——Forget it unless he carried liability insurance.
——Leave a note in a conspicuous place on the car, with his name and address or telephone number.

35. Several college girls stop at a fountain on the sidewalk to get a drink. Some small boys are playing around it. The boys withdraw as the girls approach, but suddenly one of them squirts water from his mouth on one of the girls. What will the girl do?

——Speak to him, saying he should not do such things.
——Ignore the boy.
——Sharply reprimand the boy.
——Paddle or slap him, or duck his head in the fountain.

36. Cheer leaders were being selected for the season at a pep meeting. A certain prominent student was trying out. A number of his associates decided to give him the works. All of his efforts were met with loud cat-calls and hoots. What will the boy do?

——Do the best he can and ignore the cat-calls.
——Make a joke of it.
——Ask for a display of sportsmanship, but not lose his temper.
——Wait for them to tire of their noise-making before continuing.

37. A student makes the basketball squad, but does not get to play. The season is almost half over, and he is beginning to wonder if he is going to earn his emblem. If he withdrew from the squad he might find some other school activity in which to participate. What will he do?

——Stick to the squad as long as he can make the grade.
——Withdraw and turn to something else.
——Complete this season, but do something else next year.
——Have a talk with the coach.

38. A student seated in the rear of a large room at a meeting was straining her ears to hear the speaker. A friend came in and took the adjacent seat, and started talking. The student wants to hear the speaker. What will she do?

——Tell her friend to be quiet, as she is trying to hear.
——Hint to the friend that she is interested in what is being said.
——Suggest that they talk later.
——Listen casually, hoping the friend will take the hint and stop talking.

39. A group of students are walking down the street, including some girls that Bill does not consider his friends. As he passes, he says, "Hello" to the group. They reply to his salutation, but just as he is past, he hears one of the girls make an uncomplimentary remark about him. The remark is about the use of his girl friend's automobile when they are out on a date on special occasions such as a formal dance. (The boy does not own a car.) What will the boy do?

——Let is go in one ear and out the other.
——Walk on, but later tell the girl he had heard the remark.

——Say nothing, but make arrangements about hiring a car in the future.
——Turn back and say he heard the remark.

40. A boy has a dog that is bad-natured. He is in the habit of growling and the like at the postman, the milkman, and all strangers. One day a woman called at his house for a donation to the Red Cross. The dog grabbed her skirt and ripped it just a little bit. The woman was very angry. What will the boy do?

——Give a donation to the Red Cross.
——Tell her it was her fault.
——Apologize for it.
——Offer to pay her to have it repaired.

41. This happened in a laboratory. Some of the boys had a large "PRIVATE" sign, and they decided to hang it on the back of Bob's lab partner. Both the lab partner and the other boys were good friends of Bob's. The sign was hung without the lab partner knowing it, and the whole class was laughing at it. What will Bob do?

——Take the sign off the lab partner.
——Laugh at it too.
——Ignore it.
——Laugh and call the lab partner's attention to the sign.

42. A girl entered a hat shop with the intention of purchasing a hat. None of them seemed to appeal to her, however. The clerk became quite impatient and insistent that she select a hat there. What will the girl do?

——Just say she does not see anything she wants, but will be in later.
——Walk out at once, without commenting.
——Tell the clerk she has the privilege of buying where she chooses.
——"I'm sorry," and walk out.

43. Mrs. Jones went downtown for the afternoon having forgotten a bridge party to which she had been invited. Upon returning, the phone rang, and the hostess of the party inquired why she had not come. What will Mrs. Jones do?

——Explain she had forgotten.
——Tell her she had had an unexpected piece of business to which to attend.
——Say she had had to go to the doctor's, or some such urgent reason.
——"Oh, was it today?" or, "I got the date mixed up."

44. One afternoon, three college girls hiked to the top of Grandad Bluff. They were hot and thirsty and looked around for a fountain, but there was none. They saw a boy selling coca-cola at the shelter-cabin, and they immediately ordered some. After serving them, the boy said they were 10¢ each. They had only 15¢ with them. What will the girls do?

——Drink the cokes and then make arrangements about later payment.
——Try to convince the boy that 5¢ for cokes is a better price, and that he will make more that way.
——"This is a heck of a note. Why don't you advertise the price?"
——Explain to the boy that they can only pay for one, and make whatever arrangements they can with him before drinking them.

45. Two neighbor children often come over to Mrs. Jones' home. They are about six years old. Usually they behaved well, but they quite often helped themselves to food without asking. What will Mrs. Jones do?

——Tell them in a pleasant way they must ask for food, not just take it.
——Tell them firmly that such practices are not nice.
——Hide the food or put it out of their reach.
——Scold them the next time it happens.

46. Two fellows were out duck hunting. They waited in their respective blinds for some time. Finally a mallard came winging over, and both hunters shot at it. The bird fell, and the hunters both claimed to have shot it. How will they settle the argument?

——Arrange for one to take the duck, and the other to come to dinner when it is served.
——Flip a coin for it.
——Suggest that the hunter having the smaller bag at the end of the day, take it.
——Shoot at a mark, the best shot winning the duck.

47. A girl was at a dinner dance at Marquette University. She was seated among the guests of honor, as her escort was the president of the fraternity. A professor present had the same surname as hers, although they were not related. Later on while dancing, a

professor introduced her to another as this professor's niece. He had assumed that since their names were the same they were related. What will the girl do?

——Explain they were not related, but add she wishes they were.
——Say that they do not happen to be related.
——Let it go.
——Inform the professor (who had made the introduction) of the mistake, and let him correct it if he wishes.

48. A girl is attending a tea for the first time. When getting her cup of tea, the person pouring asked whether she cared for lemon or cream. The girl said both. The woman asked her again, and still the girl said both. What will the person pouring do?

——Tell the girl that it would taste better with one or the other rather than both.
——Give her both.
——Just give her one without commenting.
——Pour in the cream and put the lemon slice on the saucer.

49. Two couples are returning from a dance. Another car forces their machine from the road. This other car also goes into the ditch. The occupants, two men, are intoxicated. One has passed out completely, but the other is quarrelsome. One of the boys goes for help, and the other remains with the girls. The drunk man becomes very abusive in his language, and the girls start to cry. What will the boy do?

——Tell the man to calm down, or threaten to have him arrested.
——Explain to the girls that he is nothing to cry over.
——Walk away a short distance with the girls.
——Sock him, or slug him with a car tool.

50. Sally works for a hosiery concern. One of the duties she has is to deliver a report to the vice-president's office. On this particular day, he inquired what size hose she wore. He then asked her to step to his desk so he could see her legs, explaining that he wanted her to model some hosiery. What will she do?

——Do as he asked.
——Say she had rather not.
——Tell him she does not wish to do any modeling.
——Ask if the modeling will mean an increase in pay.

51. Six girls were at an informal party in the home of one of the girls. One of them, Jane, asked the others to teach her a new card game. Tables were set up and they started to play. Just then the phone rang and it was for Jane. She returned from the phone in an excited manner. A young man had called for a date for himself and for his friend. What will Jane do?

——Ask permission to leave.
——Refuse the date.
——Get one of the other girls for his friend; both go.
——Accept the date and excuse herself.

52. A person was waiting in a rather secluded corner of a friend's living room while the friend sent upstairs to change his clothes to go swimming. As he sat there, some members of the family came into the house and he could hear them discussing a very private matter. What will he do?

——Try not listen and pretend not to hear if they came into the room.
——Keep quiet—and keep the secret.
——Cough, shuffle, or otherwise give some audible sign of his presence.
——Get out of hearing, such as by stepping out on the porch.

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